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No. 7. VOL. 3.

Edited by RICHARD TWELVETREES, A.M.I.MECH.E., M.S.A.E., M.SOC.ING.CIV. (France).

JANUARY, 1927.

EDITORIAL NOTES.

Ramblings, Rumours and Reminiscences.

Being Asides About All Sorts of Things.

IS it possible for motor repair work to be carried out on systematic lines? That is the burden of my principal Rambling this month, which, by the way is the first month of a New Year, so here's a Happy New Year to all our readers. That, of course, suggests new resolutions and as I am never able to keep those made on my own behalf I am about to suggest a few for the benefit of those who are engaged in the business of straightening up our cars and motor cycles after the rigours of competition work, or in supplying our modest needs in the way of small repairs.

Now, for some obscure reason the business of repairing is considered a somewhat undignified way of earning a livelihood and consequently very few people have tackled it on business-like lines. There are exceptions, naturally, but the inside of the average repair shop is a deplorable mess and messy too are the general methods that prevail.

As far as I am able to judge, the matter of system ends with the preparation of the job instruction sheets and thereafter the unfortunate customer has to take pot luck as to how the job is completed. And why do small repair jobs cost so much money? I am firmly convinced that what we have to pay for is not so much the actual work that is done, but for *the time that is wasted!*

The car goes into dock for a few jobs, and Tom, Dick and Harry are detailed to do certain things. The trio pick up their time sheets and carefully enter the job number, after which figures are added to represent the number of hours during which it is under their care. Dick borrows Harry's spanner and takes it away to adjust the brakes on another car, leaving it on the floor in some other part of the shop. Harry misses the tool and after arguing for a long time with Dick sets off to find it for himself. Meanwhile the clock is ticking steadily round and the search continues at the rate of 3s. per hour for which the customer pays. This kind of thing could be elaborated to an indefinite extent without the slightest exaggeration and so the charges mount up.

In many repair garages entrance is forbidden to customers, probably for the simple reason that if they saw the dirt and disorder they would never allow their cars in the place at all. But is all the dirt and disorder necessary? No, Sir, emphatically NO!

There are tidy and well conducted repair shops for only last week I saw one with my own eyes. I happened to be making a business call at a provincial omnibus garage and from the window of the Chief Engineer's office, caught sight of something which almost made me gasp with astonishment. There were a number of clean looking mechanics working like billy-oh on all kinds of repair work. On looking more closely I could see no vestige of dirt or grease (No, this is not a Christmas fairy story), and like the thatched cottage of the poem, "Everything within it was wondrous neat and clean."

On arriving in the morning, the men hung up their coats on a rack which immediately went up to the roof out of the way and from then until dinner time there was no inducement, or excuse for them to leave their respective places.

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EDITORIAL NOTES—continued.

The lay-out of the shop was a marvel of organisation. First of all, all the dirty work was performed downstairs where the parts to be repaired were cleaned in caustic soda. This done, a lift conveyed them to a Viewer's table, where everything was measured up and classified into Scrap, Repairable and Good classes, each job being handed out accordingly. Thus the mechanics were not called upon to decide upon any important technical points, a responsibility carried by a man who was thoroughly qualified for the job.

Tom, Dick and Harry no longer pounced upon any car to do their work in the ordinary irresponsible manner, but had their movements ordered by a system and a particularly good system it was too. The job of re-fitting bearings was one man's work and his bench was adjacent to the lathe and grinding machine whereon bearings were bored and journals re-ground and so the work proceeded sectionally until at the end of the day the complete engine was on the test bench for final passing out.

You can call the spotless benches and floors, the painted machines and the polished tools " eyewash " if you like, but the fact remains the work was turned out in incredibly quick time and with perfect accuracy too. After all, why should not repair work be performed with just as much care as production jobs ? Goodness knows, I don't.

* * *

Having tried at various times most of the devices claiming to promote easy starting in winter, I have come to the conclusion that there are few things more effective than a small piece of firewood, an example of which now occupies a place of honour inside the dashboard of my car. Prior to my discovery of its wonder-working qualities, the process of starting was a four handed affair, two hands being required to " wangle " the carburettor, another to swing the starting handle and a fourth to hang on somewhere, while swinging. Occasionally a third person was needed to press the starter button during the process ; but now the piece of firewood acts as my sole assistant even on the coldest of mornings.

This is how we do our respective jobs. The firewood, cunningly inserted in a particular way, holds the air strangler closed and at the same time retains the throttle in the " full open " position. The carburettor is then flooded and the handle swing with the switch off. Then by switching on, the engine starts eagerly on the second pull up. The dodge will render starting quite easy in almost every case, with any kind of carburettor, though of course the stick can be dispensed with on cars with dashboard controls for the strangler and a hand operated throttle, the latter being absent in many small cars of the sporting variety.

* * *

Using a car for business puposes practically all the year round and naturally not being desirous of wasting much time on the road—even if that means an occasional infringement of the 20 m.p.h. speed limit—one cannot but be grateful for the good services of the Automobile Association road patrols. I estimate that during the past six months they have saved me about £50, which but for their silent warnings would have gone into the coffers at various police courts.

On those rare occasions when a car packs up with some serious mechanical trouble it is a great comfort to find a garage owned by an individual with real sympathy for a traveller in distress. Last month a small but very important part of the transmission of a car I was driving came badly unstuck, and it looked as though the 'bus would have to be abandoned at a wayside garage, whilst the return journey was made home by train—a most undignified proceeding.

Fortunately, however, the breakdown occurred near the Bracknell Garage on the Wokingham Road and Mr. Strachan, the proprietor, turned out to be a really good Samaritan. Though it was late at night, he kept his premises open whilst we awaited the arrival of the makers' service van with a new part, which by dint of pulling the car half to pieces and working all through the night, was duly fitted. Mr. Strachan lent his tools, kept his lights burning and gave us welcome hospitality and by his help the car was repaired in a few hours. Had he taken a less sympathetic view of the business, it would have meant a long delay and much expense, though many a garage proprietor would shut up shop and let things take their course when the day's work was done.

* * *

With a reconstructed company and a new works, the famous Aston-Martin car is shortly to make a welcome reappearance. Rather on the expensive side, perhaps, but a little thoroughbred in all its details is the Aston-Martin and if the production models are to be anything like the masterpieces built by " Pa " Martin at Kensington, the " A.M." will very quickly become a firm favourite with the sporting motorist once more, especially if by quantity production it will be possible to bring the price down somewhat.

* * *

There still seems to be room for a great deal of detail improvement in car design and many a promising car is found wanting when the smaller points which concern the owner are considered. Take the question of using the jack for wheel changing for example, and observe how difficult it is to get the jack into place under the rear axle, leave alone the hazardous procedure of removing the wheel with such a ricketty support. One man I know dreads having a puncture in the near side rear wheel of his sports car, because the only place under which he can put the jack is the *brakedrum*. Recently, he has had some trouble with his brakes and wonders why !

The idea of using jacks permanently attached to the chassis is good in some ways, provided one only travels on good roads and that the jacks are not often used. Perhaps my own experience in this way was unfortunate, because after fitting two of these jacks I went through a London—Land's End Trial, knocked the off side jack off on Blue Hills Mine and a boulder a little further along the rough part of the route nibbled off the other. Thus I found myself jackless during a trial.

In spite of all arguments, I cannot bring myself to agree that it is good for the bodywork to raise a car from the middle of the frame at one side and as long as makers will leave a wee space for the head of an ordinary jack under the axles, a good quick acting jack carried in the tool box, seems to be the best kind of appliance.

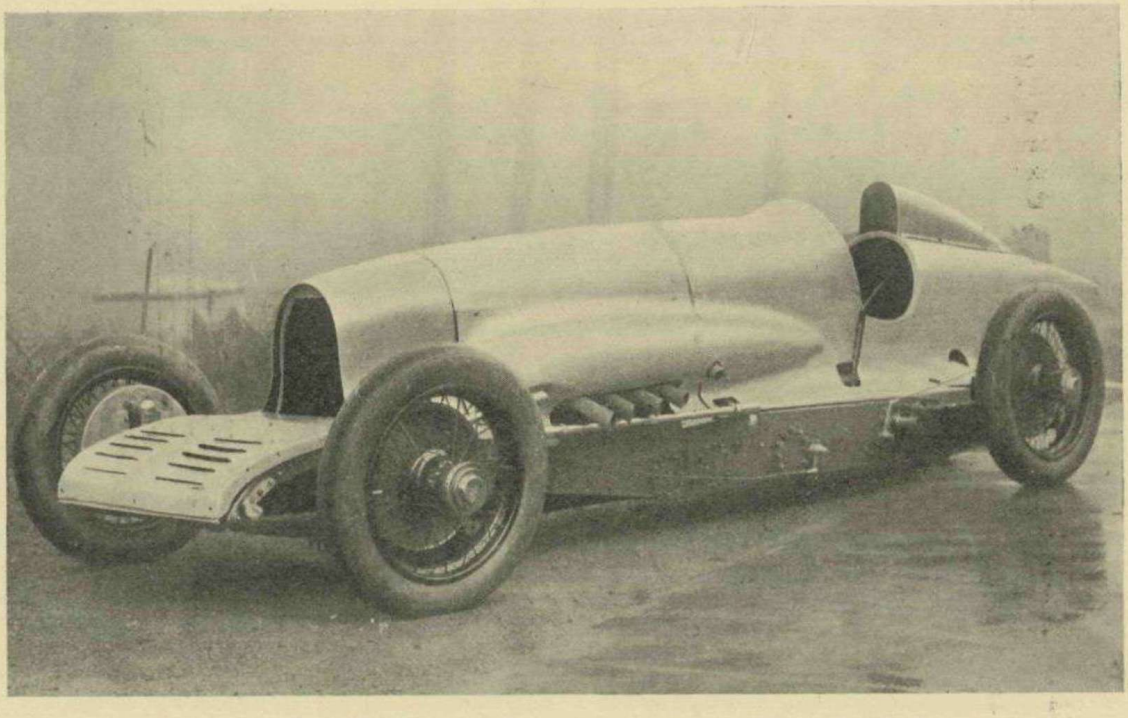
THE "NAPIER-CAMPBELL" RACING CAR.

Details of Capt. Malcolm Campbell's 450 h.p. New Chassis.

AT the time of writing preparations are being made for the attempt to accomplish a speed of 180 miles an hour and the following description gives the principal details of the huge Napier-Lion engined car, upon which Capt. Campbell has been engaged for a long time.

We recently had the opportunity of inspecting the machine whilst the final preparations were in progress at Capt. Campbell's private workshop and made a close examination of all the details. A mere description, however, cannot adequately convey the wonderful degree of workmanship that is to be seen at all points on the chassis, for though the components are naturally judged from the fact that everything has been machined out of the solid, with the possible exception of the accelerator pedal, which is made from a valve stamping.

The chassis is enormously strong and was made by hand at the Don River Works of Messrs. Vickers, Ltd., three per cent. nickel steel being used throughout. The side members are exceptionally deep and the four enormous tubular cross members are machine forgings. As very little ground clearance is required on this car, the frame is very low, extra stability being provided by the method of slinging the frame under the rear axle. From an inspection of the frame it appears inconceivable that any whip or distortion of the frame could possibly



STREAMLINED ON AIRCRAFT THEORIES, THE NAPIER-CAMPBELL OFFERS VERY LITTLE WIND RESISTENCE.

of immense strength, a factor of safety of 7 to 1 prevailing throughout, this does not prevent an exquisite finish to the mechanical parts, which is such that is seldom seen in any form of car.

The Napier-Campbell is not merely a chassis provided to carry a huge aero engine, as has been the case when giant cars have been produced hitherto, but is designed with the greatest originality, backed by Capt. Campbell's personal experience of the special requirements for running at the terrific speeds which it is hoped to attain.

Mr. Joseph Mania is responsible for the greater part of the design and the car was built at the premises of The Robinhood Engineering Works, where the K.L.G. sparking plugs are made. Most of the components have been built to special order and some idea of the amount of work involved in their manufacture can be occur, but as Capt. Campbell pointed out, nobody knows yet what may happen, as soon as this leviathan begins to move at its maximum speed. At all events, every possible precaution has been taken to achieve the desired object and although many unconventional features of design have been incorporated, there is little of a really experimental nature to be seen.

Constructional Features.

The engine is a Napier-Lion direct drive aero engine, with twelve cylinders arranged in three blocks of four, the centre block being vertical and the two others disposed at an angle of 60 degrees. The R.A.C. rating of the engine is 145.5 h.p., but at 2,000 revolutions per minute 450 h.p. is available and when the speed is increased to 2,200, the power developed is 502 h.p., thus

THE "NAPIER-CAMPBELL" RACING CAR—continued.

compared with ordinary racing car engines, this one may be considered as having a low speed.

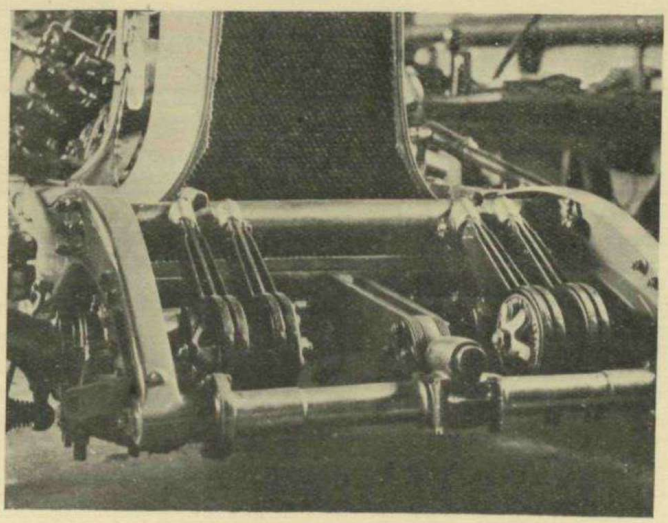
As the whole engine weighs 915 lbs., the weight per horse-power is only 1.83 lbs., which gives some idea of the wonderful efficiency of the modern aero engine. The engine lay-out also, provides this enormous power in a comparatively limited space and the projecting cylinders do not, as might at first be supposed, interfere greatly with the stream-lining of the car as a whole. Two twelve cylinder magnetos are used, these being driven by a cross shaft at the front of the engine, and two K.L.G. plugs are fitted to each cylinder.

The clutch is of the multiple dry disc type with sixteen Ferodo lined surfaces 11¼ in. in diameter and to ensure a free engine with the epicyclic gearbox used, an additional hand lever is provided at the left hand side of the driver, as well as the ordinary form of clutch withdrawal mechanism. The clutch is incorporated with the fly-wheel in the ordinary way and the driven member is formed by the casing of the clutch, upon which is mounted a metallic flexible joint of 13½in. in diameter.

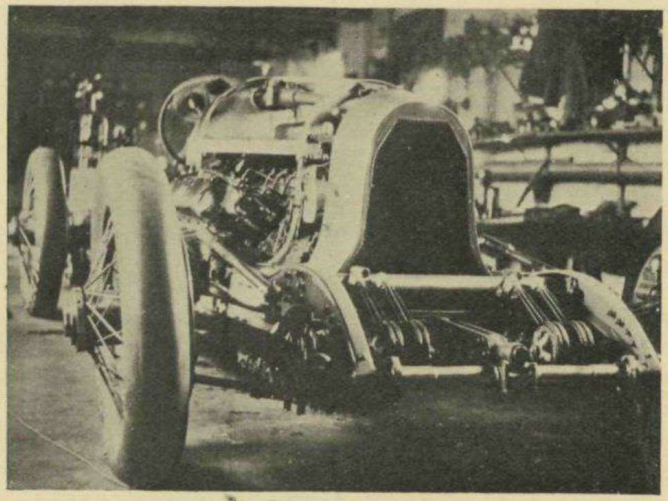
A large spherical joint is situated immediately at the rear of the clutch, which carried by one of the four cross members of the frame, supports the forward end of the gearbox. The latter is one of the very special features of the car and is the joint invention of Mr. W. S. Foster Brown and Mr. Joseph Mania. The gear box provides three forward speeds and one reverse, the ratios being as follows :—First speed, 1 to .333, second 1 to .666 and 1 to 1 for top gear, the ratio of the final drive being 1.27 to 1.

In the usual form of epicyclic gear, frictional breaking surfaces have to be used for holding the various drums in order to bring the satellite pinions into operation, but in this case a special patented device is adopted, whereby the power is transmitted without the slightest friction. This we were able to judge by removing one of the small covers on the gear box and by turning one of the pinions, the whole car could be moved backwards or forwards by the effort of the hand alone.

The gear box, which is a very substantial piece of work,



THE FRONT AXLE TORQUE ARRANGEMENT RELIEVES SPRINGS FROM TORQUE STRESSES.



ILLUSTRATING DISPOSITION OF CYLINDER BLOCKS WHICH ARE COVERED BY TREFOIL SECTION BONNET.

was built by Messrs. Beard and Fitch and is fitted with roller bearings throughout. A novel system of conical friction wheels has been inroduced, by which small pinions on the lay-shaft are slowed up or slowed down, in order to relieve the satellite carriers of all shock whilst they are being brought to rest. The whole gear box forms an integral unit with the rear axle and is carried on the forward end of the torque tube.

The design of the rear axle includes a method of supporting the crown and bevel independently of the axle casing, so that any possible distortion of the latter will leave the gearing unaffected. Reinecker bevels are used for the final drive and the axle shafts are fully floating. At either side of the axle casing are two conical extensions, machined from solid forgings, which carry the weight of the car and at the ends of these are carried the rear wheel bearings. Triangulated torque rods fitted between the spring blocks and the rear of the gearbox, give additional bracing to the unit as a whole.

Built in two pieces and joined in the middle by substantial flanges, the front axle has a laminated torque member, extending forwards to a round cross member fixed between the front dumb irons, the idea of this arrangement being to relieve the front springs of all torsional stresses.

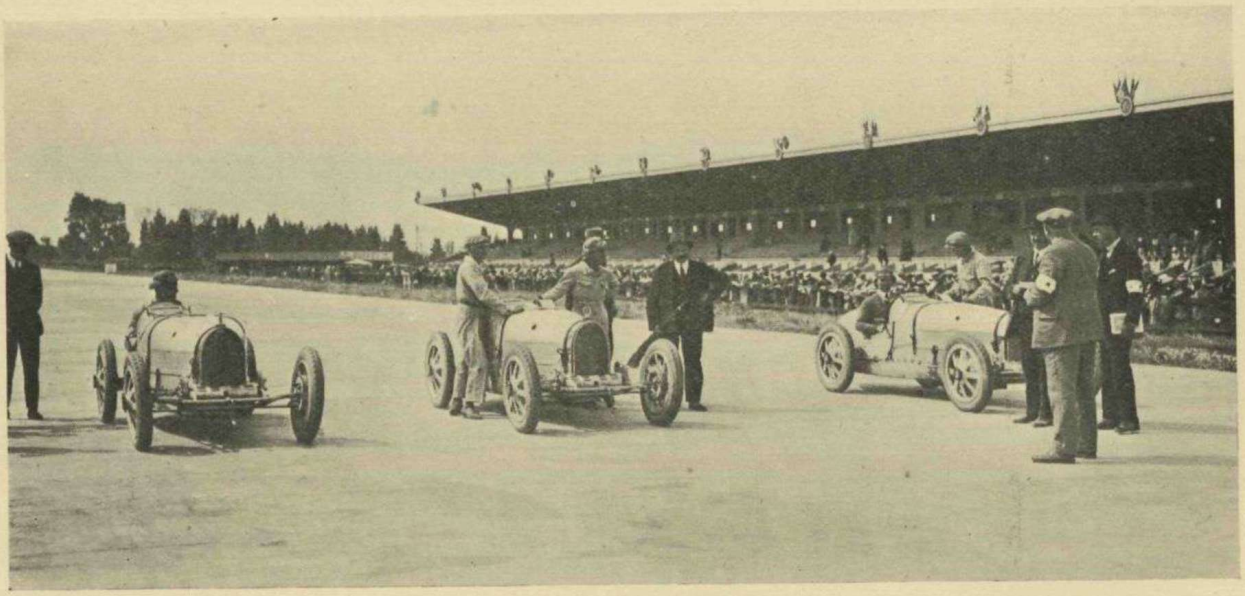
The whole of the steering gear is duplicated throughout and a considerable amount of work was necessary to synchronise all the movements to give the necessary degree of accuracy. A flexible spoke steering wheel is used and the bevel gearing at the bottom of the column has a cross shaft extending right across the frame and at each end of this cross shaft is a Marles steering gear operating the two drop arms. Thus by the use of two steering drag links, each front wheel is directly controlled, but this lay-out does not interfere with the application of the ordinary Ackermann principle of steering.

Four duplex shock absorbers of the Hartford type are used in conjunction with the front axle suspension, their upper ends being secured to a special cross member immediately over the front axle.

(*Continued on page 210*).

MOTOR RACING PROSPECTS FOR 1927.

By E. K. H. KARSLAKE.



IT IS HOPED THAT THE RACES OF 1927 WILL NOT BE MARRED BY THE PAUCITY OF ENTRIES THAT SPOILED SO MANY EVENTS IN 1926.

THIS year there will be five races which count for the Championship of the World, all of which, as last year, will be for cars up to 1,500 c.c. capacity. These are the Indianapolis " 500," and the French, Spanish, Italian and British Grands Prix.

As will be seen from the calendar, the British Grand Prix is the last of the series, which is a very substantial advantage, as it will thus constitute the final for the Championship. This should secure a very good entry for the race at Brooklands, as any firm who is still in the running will be sure to enter for it. Last year our own race was undoubtedly the most successful of the series, but there is every reason to hope that the second British Grand Prix will be even more interesting than its predecessor.

After Reims, Deauville and Trouville, Lille, Bordeaux, St. Gaudens and even the Bois de Boulogne had been suggested as a venue for the French Grand Prix, the A.C.F. have finally decided to hold their race on the road circuit at Montlhery. It seems rather a pity that in France, which of all countries in the world has the greatest facilities for running motor races on the public roads, the great event of the year should be relegated to an artificial road track. The most interesting suggestion of all was undoubtedly that the race should be run in the Bois de Boulogne. Although the idea of a Grand Prix round Hyde Park might seem somewhat Utopian to English motorists, the difficulties in the way of gaining permission for the race to be held in the French capital would not seem to have been insuperable. Certainly the race in the centre of Paris would have done much to popularize the sport of motor racing, and its publicity would have been so great, that it is not improbable that some of the biggest firms in the French industry, who have long regarded racing with indifference, would have returned to the arena. The road circuit at Montlhèry, while providing a good test of brakes acceleration, road-holding qualities, etc., lacks the glamour of a course over the public roads, and indeed, after the " revolution " in the A.C.F. last year, the new sporting commission came in on a sort of " back to the road " policy. The race, however, is nowadays provided with 150,000 francs of prize money, with the result that it is probably found impossible to make two ends meet, without the assistance of gate fees.

If the French Grand Prix is run at Montlhery, the Spanish Grand Prix at San Sebastian will be the only one of the Championship races to be run on the public roads, as indeed was the case last year. It is satisfactory to have at any rate one great road race, and the Spanish circuit, with its splendid scenery of rocks, mountains and torrents, and complete with its tramline, certainly constitutes a most wonderful course.

When it was founded in 1923, the European Grand Prix was supposed to be going to be run for the first time in Italy and then in the country whose cars had won it in the previous year. Although Fiat won in 1923, however, the French, afraid that the race would supersede their own Grand Prix, as the most important event of the year, insisted on holding it in France in 1924. Thence it went to Belgium in 1925 and to Spain in 1926, where it was at last won by a French car, the Bugatti. This year it will return to Italy, although 1926 was the first year she did not win the race, Alfa-Romeo having proved victorious in 1924 and 1925. The race will be held at Monza on September 6th.

As last year amply proved, the best calendar of races can easily be marred by a lack of support by competitors. A reassuring feature of the situation this year, however, is that, although the racing rules for 1928 have not yet

MOTOR RACING PROSPECTS FOR 1927—continued.

been definitely agreed upon, it is highly improbable that the great races will be for 1500 c.c. cars. For this reason, manufacturers who have cars of this type bu lt must use them this year if they want to run them successfully in the big events. There are indeed plenty of possibilities. In France there are the Bugattis, so often victorious last year ; it is possible of course, that Ettore Bugatti may be content to rest on his laurels, but the sporting nature of the Molsheim manufacturer, as well as his well-known policy of " We race what we sell and we sell what we race," makes this improbable. Then there are the Delages which showed their worth by their handsome victory in the British Grand Prix, and whose minor difficulties such as cooking their drivers should have been overcome by next season. The new 8-cylinder Talbots only found their form at the very end of last season, and have never yet had a chance of showing what they can do in one of the important Grands Prix. Next year, however, they should give a good account of themselves. As well as these there are the very interesting 2-stroke Sima-Violets, which so far have only appeared in the Grand Prix des Voiturettes at the Boulogne meeting ; it is to be expected that more will be seen of them in the future.

In Italy, O.M. of Brescia have a set of straight eight 1,500 c.c. racers which were entered for the European and Italian Grands Prix as well as the 200 Miles Race last year, but which have not yet made their appearance. The very attractive 12-cylinder front-wheel driven Italas should also be ready by next year, while there are reports that Diatto is producing some 1,500 c.c. racers and rumours that Isotta Fraschini is doing likewise. The intentions of Fiat are as usual obscure. Last year they had some racers built with the very interesting 6-cylinder opposed-piston 2-stroke engines, and in the hands of Pietro Bordino appeared for practice at Monza. The results were said to be very satisfactory, but the cars were not entered for any races last season, and finally it became known that they had built new engines to replace the 2-strokes. No details of these new engines have, however, been allowed to become known.

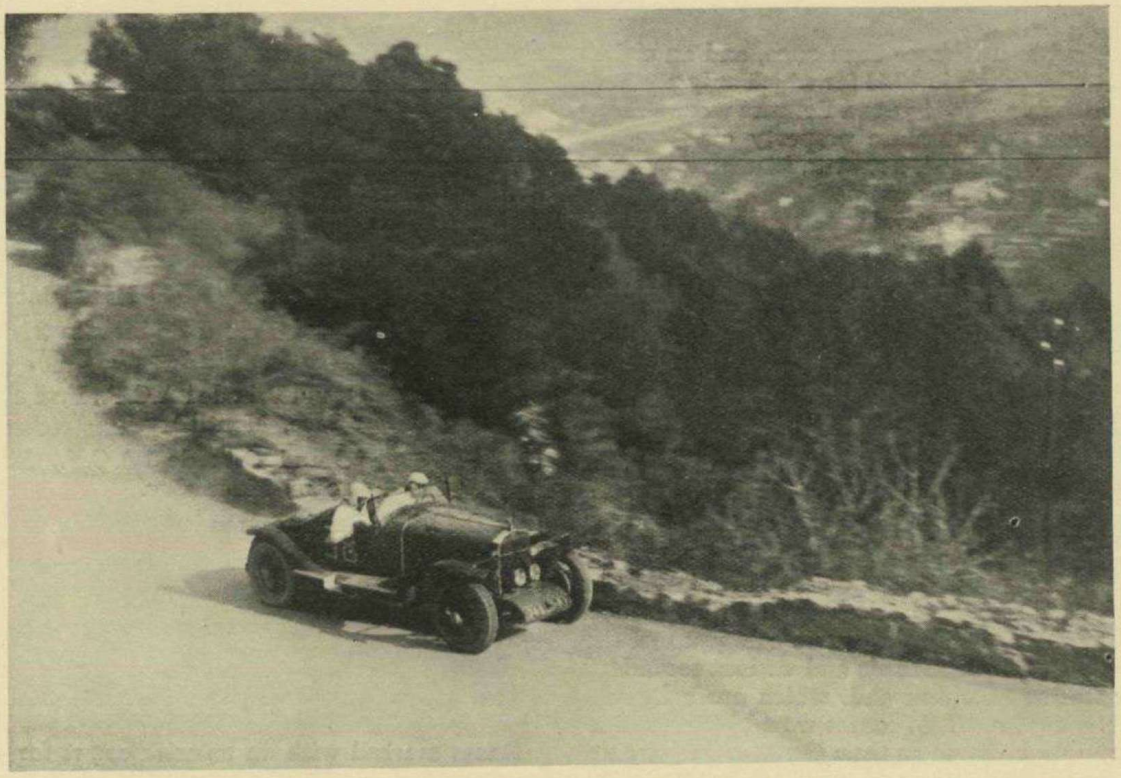
THE A.C.F. GRAND PRIX WILL BE HELD ON THE MONTLHERY ROAD CIRCUIT.

THE 24-HOUR RACE AT LE MANS WILL BE HELD AS USUAL IN JUNE.

There is every probability also that next year we shall see some American entries for the big European events. In the past a considerable amount of complication has arisen owing to the fact that the Automobile Club of America was the body represented in the International Association of Recognized Automobile Clubs, while the entire control of racing on the other side of the Atlantic was in the hands of the American Automobile Association. This November, however, an agreement was reached in Paris, by which the A.A.A. is recognized as the controlling body in America, while the A.C.A. is its representative in Europe. American manufacturers and drivers will now be able to compete in European races without fear of having their competition licences suspended by the Association for taking part in unauthorized competitions. As well as this, the European authorities have agreed to drop their rule excluding cars with central steering, which of course is a feature of the narrow single-seater America track racers, and one which it is not easy to alter. The Americans are at present showing some reluctance to agreeing to the European minimum width of 80 centimetres (31 inches), but it is to be hoped that an agreement may be reached on this point also, while in any case it is not a very difficult matter for the American cars to fit wide dummy bodies for the European races, as was proved by the Duesenbergs which ran at Monza in 1925.

It is unfortunate that among the cars likely to take part in the classic events of the year, there are no English racers, for all the green paint in the world will not disguise the fact that the Talbots were built at Suresnes, except perhaps to spectators of a similar colour scheme ! (Incidentally also these cars are painted blue when appearing on the continent.) The International Association is likely to give a definite ruling on what constitutes the country of origin in a racing car, before the beginning of the season. There are, however, the very interesting 8-cylinder front-wheel-drive Alvises, which proved much the most formidable rivals of the Talbots in the last 200 Miles Race, and

MOTOR RACING PROSPECTS FOR 1927—continued.



IT IS PROPOSED TO HOLD A RACE ON THE BEAUTIFUL MOUNTAIN ROADS IN THE NEIGHBOURHOOD OF NICE.

which it is sincerely to be hoped will be entered in the big continental events. It is often stated by English manufacturers that racing in France is not a profitable proposition, as the French market is almost closed to British cars by the depression of the franc and high protective duties. But against this it must be remembered that such an event as a successful French Grand Prix has much more than a national publicity, and profitable markets such as Spain and Switzerland for example, may well be influenced by participation in the event.

As well as the products of the larger manufacturers there are a number of 1½ litre racers belonging to smaller firms or amateurs which may be seen in next year's races. Examples of these are the Eldridges, Thomases and Halford in England, the Guyots in France, and the Maserattis in Italy.

On the day preceding the 1,500 c.c. race, the A.C.F. will hold another Grand Prix, which will be run on a limited fuel consumption basis. 18 litres of fuel and oil per hundred kilometres will be allowed each competitor, which will mean that the cars will have to average about 20 m.p.g. of petrol and 250 m.p.g. of oil. The French club hopes to secure entries for this race, from the many firms who do not favour the present 1,500 c.c. capacity regulation. The race is of especial interest owing to the fact that the racing rules for 1928 have not yet been definitely agreed upon ; while at present they are supposed to be going to " free-for-all " events, it is not improbable that a fuel consumption limit will be introduced. This year's race is provided with 100,000 francs worth of prizes, which should attract a considerable entry.

As will be seen from the calendar, this year's 200 Miles Race at Brooklands is separated from the British Grand Prix by only a week, and it is probable, therefore, that the continental manufacturers will leave their racers in England after the big race and take part in the J.C.C. event. This should make this race, which has always been very successful, even more interesting than those of former years.

The greatest road race of the season is undoubtedly the Targa Florio which this year will be run on the traditional Sicilian circuit on April 24th. Competitors will have to cover 5 laps of the difficult Madoine circuit, which is 67 miles round and varies from sea-level to 3,000ft. altitude, and contains some 1,400 corners. Prizes amount to 290,000 lire, and entries have already been received from Peugeot, Bugatti, Alfa-Romeo, O.M. and Ricart, while negotiations are in progress for Count Maggi, who last year won the Grand Prix de Rome on a Bugatti, to drive one of the 8-cylinder 1,500 c.c. Talbots. The Ricart is a Spanish car, built at Barcelona, whose standard model is a 6-cylinder car of 1,500 c.c. capacity with two overhead camshafts, and in the case of the supersports, a supercharger. The Targa Florio incidentally represents the final of the 1926-7 Cup of the Latin Countries, for which the French, Spanish and Italian Grands Prix also count. The scoring at present is : Costantini and Goux, 6 points ; Benoist 9 ; and Sabipa (Charavel) and Minora 10, the driver with the smallest number of points after the four races have been run, being the winner.

The Florio Cup is, this year, quite distinct from the Targa. It will be remembered that, in the original rules of the cup, it was to be competed for 7 times, and then to go definitely to the firm, which had won the greatest number of times. After the seventh race, in 1924, how-

MOTOR RACING PROSPECTS FOR 1927—continued.

ever, no one had won it more than once, and an eighth race was accordingly run in 1925 for which only previous winners were eligible. That year a Peugeot won, and the cup thus became the absolute property of the great French firm. They decided, however, in a very sporting spirit, to put the cup up for competition again, the only stipulation being that it should be run alternately in Italy and France, and always on the public roads. Last year it was run in Sicily in conjunction with the Targa Florio and was won by Bugatti; this year, therefore, it will be run in France, and a road circuit has been chosen near St. Briene in Brittany, where the race will be organized with the help of the newspaper "l'Ouest-Eclair." It will be over a course of 312½ miles probably on July 17th, and any car will be eligible if it has 2 seats and weighs 800 kilogrammes or more. Fuel will be limited at the rate of 16 litres for 100 kilometres, necessitating an average consumption of about 17.5 m.p.g., but there will be no restriction on oil.

A new event of considerable interest is projected for this year under the name of the Grand Prix de Nice. The idea is to run a race on a course composed of the Upper and Middle Corniche roads and various secondary roads joining them at either end, which are being enlarged for the purpose. This course would be very difficult, but certainly no more so than the Madoine circuit. It is proposed to hold the race at the beginning of April, and there are rumours of 500,000 francs of prize money, but the precise rules are not as yet known.

CALENDAR OF THE CHIEF EVENTS OF THE 1927 SEASON.

April 24.	Targa Florio, Madonie circuit, Sicily.
May 30.	*Indianapolis 500 Miles Race.
June 18-19.	Grand Prix d'Endurance 24-hours Race (Rudge-Whitworth Cup), le Mans.
July 2.	Grand Prix de l'A.C.F., Fuel consumption race, Montlhèry.
July 3.	*Grand Prix de l'A.C.F., for 1500 c.c. cars, Montlhèry.
July 9-10.	Belgian Grand Prix (24-hour Race), Spa.
July 24.	Belgian Grand Prix, free-for-all race, Spa.
July 31.	*Spanish Grand Prix, San Sebastian.
Sept. 6.	*European Grand Prix, Monza.
Oct. 1.	*British Grand Prix, Brooklands.
Oct. 8.	J.C.C. 200 Miles Race, Brooklands.

* Races marked with an asterisk count for the Championship of the World.

THE "NAPIER-CAMPBELL" RACING CAR

(*Continued from page 206*).

Semi-elliptic springs of the Woodhead self-shock absorber type are used for the suspension of both axles, those at the rear being 4ft. 2½in. long and those at the front 3ft. 1in. long. Manganese spring blocks are used to anchor the springs to the axles by the aid of a double set of "U" clamp bolts.

Owing to the small width of the large diameter brake drums it would have been difficult to arrange the brake cams well within the centre line of the steering, but by the use of a special form of cam designed by Mr. Mania, this has been accomplished, which renders the action of the brakes and the ease of steering perfect in all respects. The brakes operate on Alford & Alder principle and can be used direct, or by means of a Clayton-Dewandre vacuum servo mechanism.

In order to obtain the best streamlining, the radiator is relatively small, therefore the header tank of 10 gallons capacity, is mounted over the steering column; the petrol and oil tanks occupy a position at the rear of the frame and are covered by the tail of the body.

The body of the Napier-Campbell, though providing little room to spare for the driver, is a wonderful piece of work and has been designed in accordance with airship practice, all the lines being carefully calculated to give the least possible wind resistance at the colossal speeds that are anticipated.

The Thompson Cup Trial.

From the nature of the course, it is not surprising that car owners held more or less aloof from the Thompson Cup Trial, which was held in the Camberley district last month.

The first hill was on Barossa Common, near the Camberley Golf links, some 200 yards from the start. Here the incline and surface was well up to Camberley standard and C. V. Patrick was seen to make a very good climb, the performance of Miss E. Sturt on another Scott being equally meritorious. An excess of caution appeared to prevent H. W. Bostock from getting up and his Triumph skidded badly, causing the rider to come to earth. One of the best climbs was made by E. C. Lunnis on a Raleigh combination.

A greasy patch some three mile further on caused a great deal of trouble among the competitors and two machines had to be withdrawn owing to gearbox failures.

Two rather exciting incidents were witnessed, the first being when V. L. Freeman overturned with his Matchless sidecar, following a puncture and the second was during the second round, L. C. Bailey travelling towards White Hill at a terrific speed on his Norton, left the track and took to the heath. By a good piece of riding, however, he managed to regain the course and actually completed the climb without stopping or using his feet.

C. V. Patrick won the Thompson Cup, the Lunnis Cup being awarded to B. W. Swabey (James) and the Burlington Cup to T. G. Meeton (Francis Barnett).

HOW WE WENT TO GLOUCESTER WITH THE N.W.L.M.C.

By "JONAH."

AT least that is where we thought we were going—but it transpired that competitors were excused the last five miles of tramlines into the town itself and were allowed to refresh themselves on the crest of Birdlip before the "easy main road" run back to Slough.

Having been through a previous Gloucester on three wheels, it was decided that this year, in deference to the advance of old age and senile decay, nothing less than four wheels was permissible. A plot was therefore hatched, and at 8.42 on December 11th, we might have been observed to let in a nervous clutch and purr quietly away from the Slough Estate in a westerly direction, complete with all four wheels. About a mile from the start we passed a pathetic looking Morgan, with its front wheels at a most unnatural angle—the first casualty. Anon we joined the queue at the foot of Quarry Wood Hill. Inch by inch the queue moved forward as each competitor attacked the leafy hairpin bend. Just as our turn arrived, a horrible shriek from the machinery warned us that all was not well. Trying to look unconcerned we took off the lid and discovered a sheared dynamo drive. Cursing the inventor of coil ignition, we resignedly pushed our four wheels to one side, erected the hood and removed all valuables. But we had no intention of letting this triviality exclude us from the pleasures of going to Gloucester; along came one whom we will call a son of Noah, since his name bears some resemblance to that of one of the off-spring of the pioneer houseboat exponent. This worthy was driving a smart four door saloon and had only one passenger; not knowing our "Jonah-like" reputation he rashly assented to the proposal that we should assist wheel adhesion by occupying the two rear seats. His suspicions were not even aroused when our combined weights were insufficient to avert hopeless wheelspin five seconds later on the hairpin itself!

Some mild speeding through lanes just wide enough, but only just, led to the tail end of an even longer queue at the foot of Maiden's Grove. This hill with its terrifying camber and deep gully, arranged in a slanting manner on the remains of a wooded slope was in very bad condition, its chalky surface having defeated nearly half the solo motorcyclists. Sidecars and three wheelers fared somewhat better, though wheelspin stopped many.

B. E. BELFIELD (MATCHLESS) LOOKS GRIM ON MAIDEN'S GROVE, BUT MAKES A CLEAN CLIMB.

For cars with differentials and without chains the hill proved almost impossible, the small and light class providing most of the few successes. Our own (adopted) chariot being chainless and somewhat ponderous, not unnaturally jibbed at being required to emulate a whippet tank, however, with Jonah and Bill (his passenger), standing on the rear "cowcatcher" and aided by some stalwart pushers (Rex Judd etc), she was slowly coaxed to the top. During the hour delay at the foot we had time to observe some excellent climbs by several Morgans, Lovatt (Jowett), Abbott (Sunbeam) and the "Cup" Austins.

Soon after Maiden's Grove the course emerged onto main roads and continued thereon for approximately

GLOUCESTER—continued.

fifty miles. What would otherwise have been an extremely monotonous section was rendered distinctly exciting and somewhat hazardous by the breakage of a very inaccessible pin in the throttle mechanism. (Jonah again !) In spite of the speed hinted at above we were twenty-four minutes late at Abingdon Bridge.

This time was not to be made up, so we pottered on our lonely way until met by a travelling marshall (ex' route marker, eastern section) who told us that as the whole trial was so late we could make up as much time as we could. Shivers from the petrified but slightly recovered passengers ! However, the driver restrained himself fairly well, the only incident of note before Bushcombe being when we crossed a sharply cambered secondary road at right angles, running downhill at some 40 m.p.h. Jonah's head and Bill's head smote the roof in no uncertain manner and on the rebound smote each other.

When we recovered consciousness we found ourselves at Bushcombe ; rubbing our still aching heads and muttering a hearty vote of thanks to Mr. Weymann for his flexible body work, we surveyed the hill. As at Quarry Wood, it did not appear at all obvious which was the actual nonstop section, as marshalls were holding up competitors at several points inside the official notices. Lack of power seemed to be troubling several of the competitors, particularly those with small engines and high gears. The enforced stoppages on the steep gradient definitely caused several failures which would not have occurred if the driver had been allowed a clear run from the foot. After helping several of the unfortunates we made our own ascent, with all three passengers in the back seats. A clean climb was recorded in spite of a certain amount of wheelspin.

Gambles Lane and the Shaw Green section were easy, though we wondered how soloists enjoyed the latter.

Sandy Lane was the next obstacle and caused still further delay ; ruts, slime and boulders causing great suffering to undershields, silencers and crankcases. We observed excellent climbs on the part of P. W. White (Armstrong Siddeley) and A. S. Llewellyn (Alvis), while at the top we encountered a Morgan with a completely disintegrated back wheel. Several competitors declined to attempt the hill for fear of removing crankcases on the boulders. Our own vehicle stuck once on the ascent and once on the opposite descent but was eventually extricated.

A short run through twilight brought us to the lunch check at the somewhat unconventional hour of 5 o'clock. However, the lunch was still there for us, so it didn't matter !

After " lunch " we set off in pitch darkness and patches of fog to find Catswood Hill. The route marking for once proved difficult to follow and we spent some time wandering about South Cotswold lanes and villages before finally picking up the right course. We had long since lost sight of all other competitors except for a few stragglers like ourselves, and in order to relieve the monotony and keep our spirits up, we proceeded in the following manner ; leaving village A, drive all out to outskirts of B, visit a house of refreshment until Jonah, who had assumed the role of timekeeper, announced that we were due at B ; crawl through B and then full throttle to the outskirts of C, and so on. This procedure had a curious effect on " Cheerful ", the original passenger, so named because he was just the opposite, anyhow he became rather more so and began to sing hymns and other somewhat vague and irrelevant ditties. By the time we reached Henley and had overtaken some other competitors friend " Cheerful " was distinctly so and endeavoured to goad our driver into breakneck races with the latter, whom he greeted with hoarse cheers as we passed.

BAD LUCK AND BAD DRIVING MAY GIVE QUITE CONTRARY IMPRESSIONS AS TO THE RIVAL MERITS OF SIDECARS AND CYCLECARS—SEE THE OTHER GLOUCESTER PHOTOGRAPHS.

GLOUCESTER—continued.

ALL TOGETHER ! A CONCERTED EFFORT ON MAIDEN'S GROVE.

Bill and Jonah were no longer able to experience fear, even when we rushed through thick fog at 40 m.p.h. Lest it be thought that our driver was reckless or elevated it is only fair to say that we never seemed to approach within a mile of any danger, such as hedges, banks or other vehicles, although the road was practically invisible. Jonah too, was still capable of keeping the cortege strictly to schedule and at a few minutes to ten we nosed our way once more through the gates of the Trading Estate.

Eggs and bacon were produced by some charming fairies who surely must have belonged to some more pleasant spot than Slough ; in fact Jonah and Bill hardly appreciated the meal, so engrossed were they in solving the mystery of the charming damsels.

Home through even thicker fog, striking matches to illuminate signposts, midnight, bed, thoughts, wondering wandering thoughts,—did we go up Catswood ? How many times ? Why did we eat potato crisps—they make one so thisty ! Is this Nettlebed—the King's Arms ? 9.22 p.m., three minutes early—no ! one minute late. What were they doing in that horrible place, and what is the Slough Trading Estate anyhow ?

I wonder if old " A— " in the S.P.A. got back to London—— !

MOTOR CYCLE RACING AT BROOKLANDS DURING 1926.

Two interesting booklets have just been issued by the B.M.C.R.C. to its members—a list of worlds records up to date, and a full awards list for the events of 1926. The latter is a most enlightening document, giving as it does the place-men in every race during the season, the complete scoring for the aggregate cups in the various classes and the best lap speeds put up by all members who have competed in 3 or 5 lap races. The results of the aggregate scoring show, in a condensed form, which riders have performed best during the year, though in some instances the winner is not by any means the fastest man ; the modest amateur should consider this fact seriously, since a regular attendance, coupled with reliability may well earn a fat total in the final score.

Students of track racing will not be surprised to learn that J. S. Worters, riding 250 c.c. and 350 c.c. Excelsior-J.A.P. machines has won the aggregate prizes for 250 c.c. solos and 350 c.c. sidecars with 50 marks and 56 marks respectively, while the same persevering rider is the holder of no fewer than 22 worlds records in various classes. C. W. G. Lacey, by virtue of great reliability and a useful turn of speed annexed the 350 c.c. solo prize with 58 marks, though it is interesting to note that there are at least three men who are capable of considerably greater speed than he has ever shown. His machine is a Grindley-Peerless-J.A.P.

A popular and thoroughly deserved win in the hotly contested 500 c.c. class should satisfy the many friends of Christopher Staniland, who rides Norton machines for R.M.N. spring. His total is 47, and he also wins the 750 c.c. prize, a performance all the more remarkable since he has performed always on a 600 c.c. machine and has defeated several 750 c.c. twins.

Nobody will grudge the 1000 c.c. solo cup to J. S. Wright, whose fearless riding of a big Zenith under the most difficult conditions is a continual source of awe and admiration, even to hardened track-men. His total is 74 and he also holds eight worlds records.

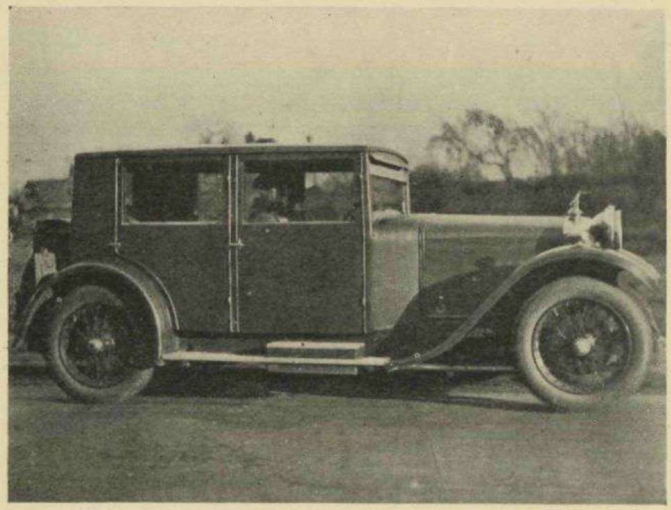
Victor Horsman is the only man to show any consistent speed in the 600 c.c. sidecar class and wins the cup with a margin of some 40 marks, and with his various Triumph machines is the holder of 20 records.

Owing to the extreme unreliability of most Brooklands big-twins H. G. Webb wins the 1000 c.c. sidecar cup with the comparatively modest total of 30 marks, though his best lap was some 20 m.p.h. slower than the best in his class. Webb and his Indian deserve credit for a consistent showing throughout the year.

With regard to the table of best lap times, some interesting light is thrown on the speeds attained by men who seldom feature in the results but who nevertheless are capable of going very swiftly ! It is strange to notice that the best published speeds of some riders in short races have been eclipsed by these same riders in long distance events ! A well known big twin rider began lapping at 110 m.p.h. in the 200 mile solo race, yet his best lap in a 5 lap race was 108 m.p.h.

On the other hand there are one or two humorous items such as a *best* lap of 49.07 m.p.h. on the part of another well known big twin exponent and 200 mile race winner !

Apart from the faster men it is interesting to note the speeds attained by the little-known men, amateurs on more or less standard machines and such, many of the speeds attained by these are extremely creditable, though hopelessly outclassed so far as serious track racing is concerned.



SPORTING CARS ON TEST: THE "TWO-LITRE" BALLOT.

By RICHARD TWELVETREES.

THE fact that the Two-Litre Ballot, I tested recently is fitted with a very smart Weymann saloon body, does not in any way detract from its qualities as a really sporting vehicle; in fact, with the uncertainties of our climate, many people are taking to this type of bodywork in preference to those of the all-weather class and in these days one must not imagine that every closed car encountered on the road must necessarily be easy prey for the driver who must pass everything he sees.

From my impressions at the end of a long day's run with the Ballot illustrated herewith, the car is capable of a very good turn of speed, whilst its general characteristics enable the driver to put up exceedingly good averages over give and take roads, besides getting about very quickly even in the thickest of London traffic.

I am afraid that hitherto, with a very few exceptions, I have been somewhat neglectful of the claims of the sporting saloon class of car, but since trying the Ballot have very strong sympathies with the people who favour it in preference to the open sports car, which they regard, perhaps rightly, as a fine weather machine.

Mr. George Newman, with whom I had recently discussed the merits and demerits of open and closed cars, suggested that a trial of the Ballot would serve to impress me as to the advantages of the saloon, and needless to say, I readily acquiesced with his proposal.

Immediately the car turned up for the test, I found that it was indeed a most handsome machine, both mechanically and from the coachbuilder's point of view, and I think the camera will show this to be the case. Unlike many of the continental saloons, one finds plenty of room in the Ballot, whilst the degree of travelling comfort must be actually experienced before it can be fully realised.

Driving away from home over a notoriously bumpy piece of road, the splendid suspension called for my first remark of approval, for whereas most cars I have tried over this piece of road assumed a very irregular mode of progression, the Ballot sailed over the rough places with hardly a shock to the passengers, four of whom were carried during the series of tests.

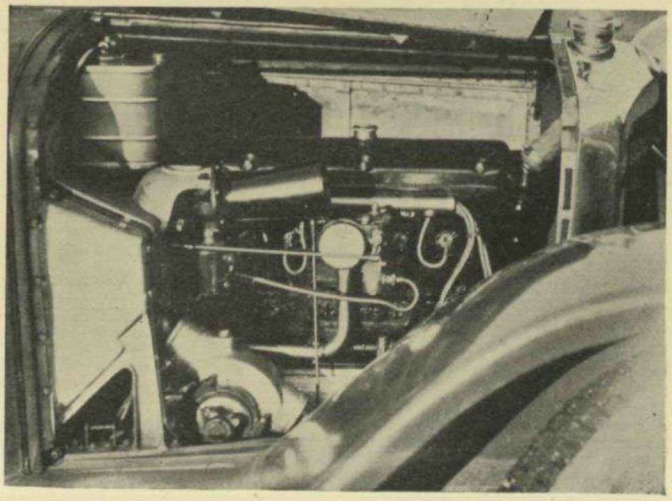
It did not take long to discover that this car is the outcome of a very large amount of practical road experience, and one settled down to the driving position as if the chassis and bodywork had been made to measure, a point which makes all the difference in the world, when handling any car with a good turn of speed.

As may be expected in a car that owes its development largely to the racing experience of its makers, the Ballot possesses remarkably good road holding qualities and after various attempts to induce it to skid, I came to the conclusion that any success in that direction could only occur on an ice covered surface, which did not happen to be available at the time.

Another point which came to light during the journey through traffic, was the excellent lock, which is in no way impeded by the front wheel brake mechanism. The car can be swung round sharp corners in a way that excites the envy of taxi drivers and, moreover, the steering is so light and accurate that it renders driving a real pleasure at all times.

One minor criticism relates to the slight hesitation of the engine to pick up after the vacuum brakes have been applied, but this I found, was easily obviated as soon as one became accustomed to the control and did not really constitute any real inconvenience. I do not think the right kind of sparking plugs were fitted at the time of the test, for after spells of fast travelling, the engine was inclined to splutter now and then.

Leaving town via Putney and Wimbledon, a few tests for speed were made along the Sutton by-pass road, where in spite of the uneven surface 60 m.p.h. was touched on third gear and 75 m.p.h. on top. On all the indirect gears the transmission is very silky, due no doubt to the accuracy with which the teeth of the gears are ground and however fast the car is driven, there is no period of vibration.



THE UNOBTRUSIVE BUT VERY EFFICIENT POWER UNIT OF THE BALLOT.

SPORTING CARS ON TEST—continued.

Over Banstead downs towards Burgh Heath, the car sailed along very comfortably and maintained an effortless sixty for the greater part of the way. Even when travelling faster still, one did not really appreciate the pace, neither was there any effort to slow down when a gentle pressure was applied to the brakes.

At the risk of appearing eulogistic about the Ballot, I must give it credit for having one of the easiest gear changes I have ever handled and unless one is extremely awkward, it is impossible to make any noise as the gears are engaged.

The third gear ratio is very useful and allows for quite quick acceleration, though if one wants to be particularly nippy, the second gear gives a refreshingly smart getaway. Using third gear alone, Reigate Hill was surmounted without dropping below 48 m.p.h. and most of the other hills on the run were taken on top gear, nothing severe in the way of colonial sections being tackled.

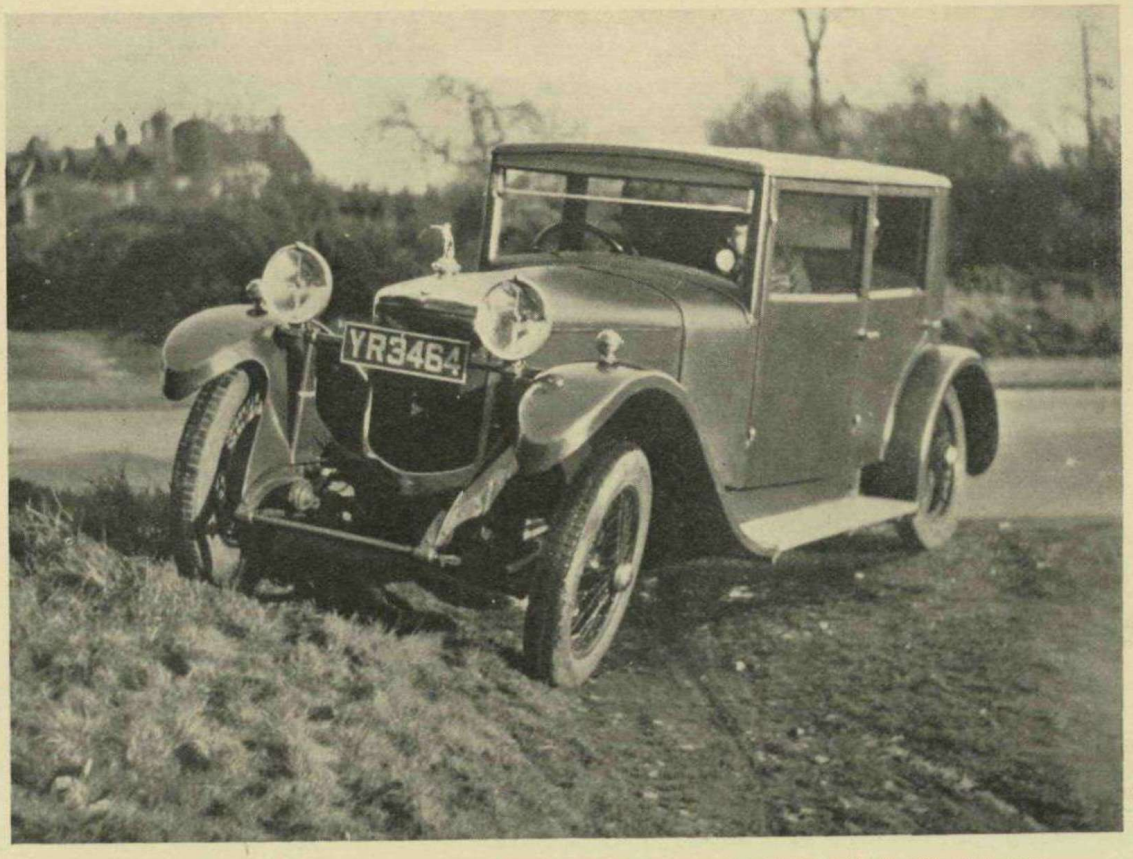
The Ballot is a car which one can travel indefinitely in the greatest comfort and gives saloon luxury with a sporting performance. In my opinion, it is about the best four cylinder car of its capacity on the road and would, I think, give a very good account of itself if tried against a great many makes with greater engine capacity.

Glancing over the principal mechanical features, we find a very high degree of workmanship throughout, for the makers, Etablissement Ballot, of Paris are engineers of world-wide reputation in marine and industrial circles.

As our illustration shows, the power unit is arranged with every care for accessibility, whilst the unit construction gives a very compact lay-out. The engine, rated at 12.1 h.p. is capable of turning over at 3,500 r.p.m. without any trouble and differs from the touring engine in that the overhead valves are inclined and operated from the overhead camshaft by rockers. The cylinder head is hemispherical and both the inlet and exhaust manifold are of large diameter.

The oiling system includes two oil pumps, one feeding the crank-shaft and the other the valve gear and all the oil has to pass through two large filters, thus preventing any possibility of the oil conduits becoming choked.

There is a large combined oil filler, filter and breather on the off side, the two above mentioned filters being located alongside in a very accessible position.



AN EXTREMELY HANDSOME AND BUSINESS-LIKE APPEARANCE DISTINGUISHES THE BALLOT.

Up to about 30 m.p.h. the advance and retard of the ignition is automatic, after which it can be controlled by hand from a lever mounted above the steering wheel.

The absence of drumming and general dashboard noises is accounted for by the careful design of the aluminium dashboard, upon which all the instruments and fittings are rigidly mounted.

Built into the flywheel is a single plate clutch, in the design of which care has been taken to provide for heat dissipation, so that being smooth in operation, it is not likely to slip unintentionally. As mentioned previously, the gears are all ground and the following ratios are provided. First, 18.59 to 1 ; second, 12.08 to 1 ; third, 6.98 to 1 ; top, 4.72 to 1.

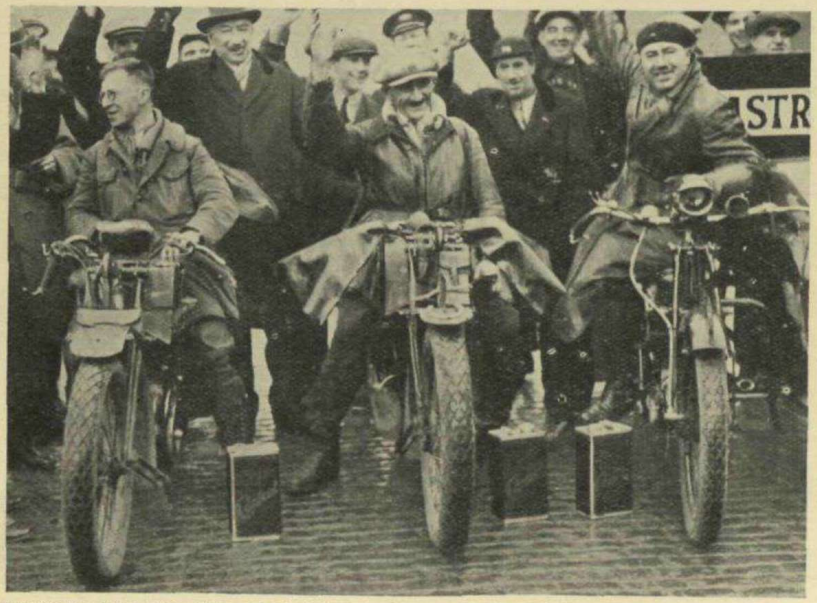
Recent Sporting

MANY SIDECARS REQUIRED ASSISTANCE ON MAIDEN'S GROVE IN THE LONDON-GLOUCESTER.

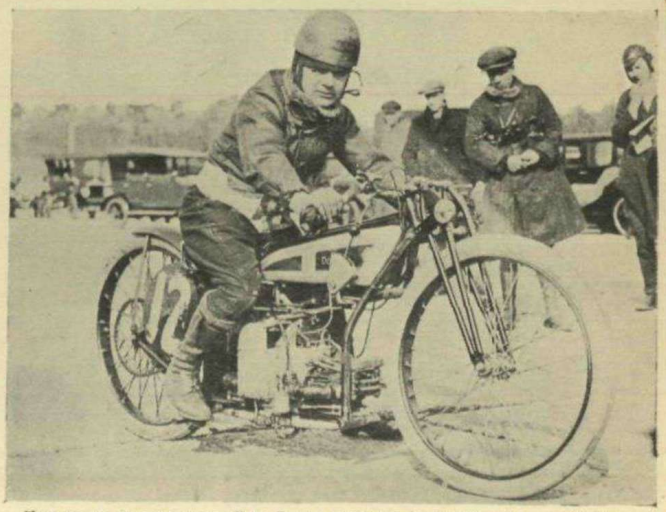
A MORGAN MAKES LIGHT OF MAIDEN'S GROVE.

E. N. BLOOR (ROVER) ON ILKLEY MOOR DURING THE N.W. CENTRE COAST TO COAST TRIAL.

KENNETH TWEMLOW, A PAST T.T. WINNER HAS TAKEN TO FLYING.



MESSIEURS SEXE AND ANDRIEU AT LIVERPOOL AFTER THEIR TRIP ROUND THE WORLD ON THE BELGIAN GILLET 2-STROKES.



THE POPULAR SPEEDMAN, REX JUDD, WHO HAS ENTERED INTO A BUSINESS PARTNERSHIP WITH BOB NEWUIT OF HIGH WYCOMBE.

Events in Pictures

A SOLO COMPETITOR UNDERGOING THE EASY STARTING TEST IN THE "GLOUCESTER."

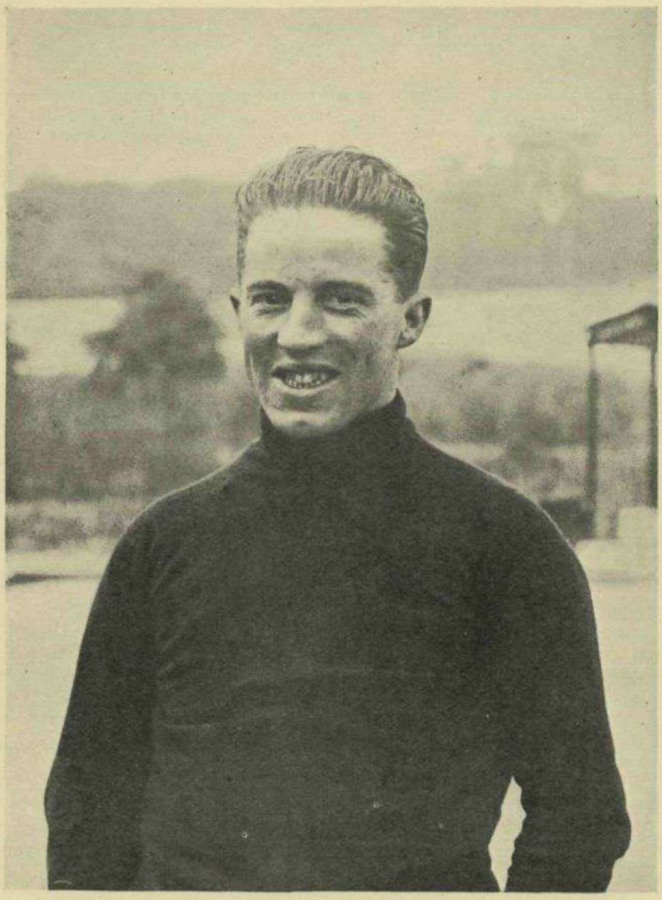
MOTOR CYCLE UNION OF IRELAND TRIAL, J. W. SHAW THE WELL-KNOWN NORTON RIDER.

J. G. P. THOMAS HAS ALSO STARTED A BUSINESS—IN GREAT PORTLAND STREET.

WILLING HELPERS PROVED VERY NECESSARY TO SOME COMPETITORS IN THE LONDON-GLOUCESTER TRIAL.

A. H. NELSON & F. W. GILES, BOTH ON A.J.S. SIDECAR OUTFITS NEAR SALISBURY IN THE LONDON TO EXETER TRIAL.

E. A. EDWARDS & S. F. FRENCH ON SCOTT MACHINES DURING THE "EXETER."



MOTORING SPORTSMEN.

Mr. John Donald Barclay.

By THE EDITOR.

THE photograph reproduced at the head of this article will be recognised at once by all our readers as that of John Donald Barclay, better known, perhaps, as Jack Barclay of "T.T." Vauxhall fame. For a long time it had been our intention to include his history in our Motoring Sportsmen series, but though Jack Barclay is never wanting for words in explaining the merits of the various cars he handles in the way of business, most of the information contained in the following notes had to be extracted from his partner, Mr. Robert Wyse.

When, however, we explained that an interview of this kind was one of the disadvantages of being famous and that our readers really *must* know who's who in the racing world, we gradually became accepted as an unavoidable nuisance and the conversation proceeded.

Jack Barclay was educated at St. Lawrence College, Ramsgate, where his lively spirits soon made him a great favourite amongst his schoolmates and he figured with some prominence in the College football and hockey teams. He also showed a decided inclination towards wheeled amusements and became a very keen cyclist, until his first motor bike came upon the scene, which soon began to absorb his spare moments.

Leaving school just at the outbreak of war, he managed to enlist, possibly by forgetting within a year or so the exact date of his birth, and whilst in the R.A.F. drove various kinds of lorries, tenders and cars on military duties.

In the year 1919, he determined to start out on business on his own account and carried on very successfully by trading in cars and motor cycles. A little later he joined the firm of Coppen & Allen, Ltd., of Great Portland Street and since 1920 has been engaged in motor trading in a district where, as all the world knows, the keenest competition prevails and where efficiency alone is rewarded by success.

Early in his business career, Jack Barclay realised the value of motor trials, both as a recreation and as a means for extending practical knowledge from a business point of view, and in various important events he has been successful with motor cycles and cars. One of his early experiences as a passenger in a sidecar during an M.C.C. Trial was somewhat unfortunate, for instead of checking in at the end of the trip, he was laid out unconscious owing to his companion overturning the outfit and crashing into a brick wall. This incident did not deter him from further participation in similar events, nor could bad luck prevent him from getting through any run he entered. On another occasion, when going to the start of a run, the failure of a gasket on his car drowned the magneto, so stopping at the roadside, he pulled the instrument to pieces, appealed to a householder for the use of his oven and after drying out the wet magneto, re-assembled it and proceeded to gain a gold medal. On this occasion also, he and his passenger excited some comment by appearing in bowler hats; a form of head-gear, which by the way, was invariably used by Mr. Lisle of the "Star" company in all trials some years ago. Whether this was selected as a form of crash helmet or no, we are not in a position to state.

In the spring of 1922, Barclay went into partnership with Mr. Robert Leslie Wyse and the firm took premises in Great Portland Street, and from comparatively small beginnings the business grew until the firm expanded with the acquisition of the handsome corner site it now occupies.

Before enlarging further on the business side of Barclay's career, his sporting achievements demand attention, for realising the great possibilities in dealing with cars of performance, Barclay felt that an intimate practical knowledge of sporting and racing cars was an essential qualification. Furthermore, the sport of motor racing appealed to him greatly from a recreation point of view, so we find him on the look out for a car that would serve the dual purpose he had in mind.

Business ties have, so far, prevented him from taking part in Continental events and in many speed trials and hill climbs in remote parts of this country. Brooklands was convenient in that racing there could be carried on without taking too much of his time or interfering with business, and he began his series of successful appearances in the Spring Meeting of 1923, his car then being a big

MOTORING SPORTSMEN—continued.

Ballot. His first experience of a real skid on the track came during the June meeting of that year, his gyrations, however, were entirely eclipsed by the historic skid on the " T.T." Vauxhall in the Easter meeting of 1926.

In the September meeting of the B.A.R.C. Barclay gained one first, one second and one third place in the three races in which he took part, again driving the Vauxhall. He has raced with three different Vauxhall cars, all of which he has specially tuned in the service department of his firm.

The following year brought a further series of successes on the track, when he gained three firsts, four seconds and five thirds, besides winning the Pawthcawl Cup on Pendine Sands and the Cup of the Grand Sports Committee at the South Wales Championship. Encouraged by the performance and wonderful reliability of his Vauxhall, Barclay began to think about attacking World's Records and in 1925 set out for the job. He was successful in annexing no fewer than eight up to and including 10 miles in the International Three-litre class, one of our photographs showing Barclay with Edwin Plaister, one of his salesmen, who always acts as his mechanic for racing.

Last year Barclay with his Vauxhall went to Southport and notwithstanding the formidable local talent, familiar with all the tricks of sand-racing, came away with seven firsts and also put up the fastest car time of the day.

During last season, also, he set up new times for the 50 miles and the 50 kilometre classes, all of which goes to demonstrate that he is fully qualified to express an opinion as to what a sports car should be and to advise any customer who has leanings towards this class of vehicle.

As there have been so many varied accounts of the historic skid referred to above and as details throw valuable light upon one of the most discussed factors in track racing, we think it fitting to give Jack Barclay's own description of the occurrence.

" I was proceeding down the Railway Straight in the second lap at a speed of about 116 m.p.h., rapidly overhauling a bunch of slower cars ahead. These cars mounted the Byfleet banking about 200 yards ahead of me, and it had become apparent to me that in order to pass them, I should have to mount the Banking considerably higher than I had originally intended, this I did and at that time I had ample room to pass. Unfortunately, however, some of the cars ahead, the drivers of which were unaware I was about to pass, mounted still higher on the Banking, thereby making it impossible for me to carry out my original intention of passing. My speed was such that it was impossible for me to wait until a more favourable opportunity occurred and I was forced to mount the Banking still higher in the hope that one of the drivers ahead would draw down. At this moment for some unaccountable reason my car started skidding

JACK BARCLAY IS BEST KNOWN BY HIS SKILFUL HANDLING OF THE T.T. VAUXHALL SHOWN HERE.

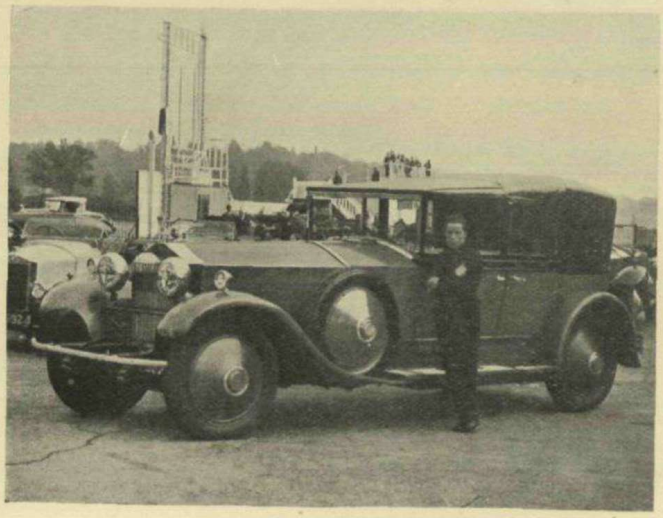
MOTORING SPORTSMEN—continued.

with the nose pointing down the banking and the tail overhanging the top ; we skidded sideways for about 50 yards practically covering this entire distance with both the rear wheels about 1½ inches from the top of the track. The car then turned completely round and skidded right down to the very bottom of the Banking. I was now going in a rearward direction at a speed of well over 80 m.p.h. and the danger was really increased as a car which I had passed a few moments before was now facing me and in grave peril of running me down, owing to my rapid slowing up. Luckily, however, my car gave a complete half turn and I found myself facing in my original direction. My engine was still running and I started to continue with the race. Mr. Plaister, my mechanic, however, pointed out that my tyres must have suffered considerably by the skid and he therefore persuaded me to draw in."

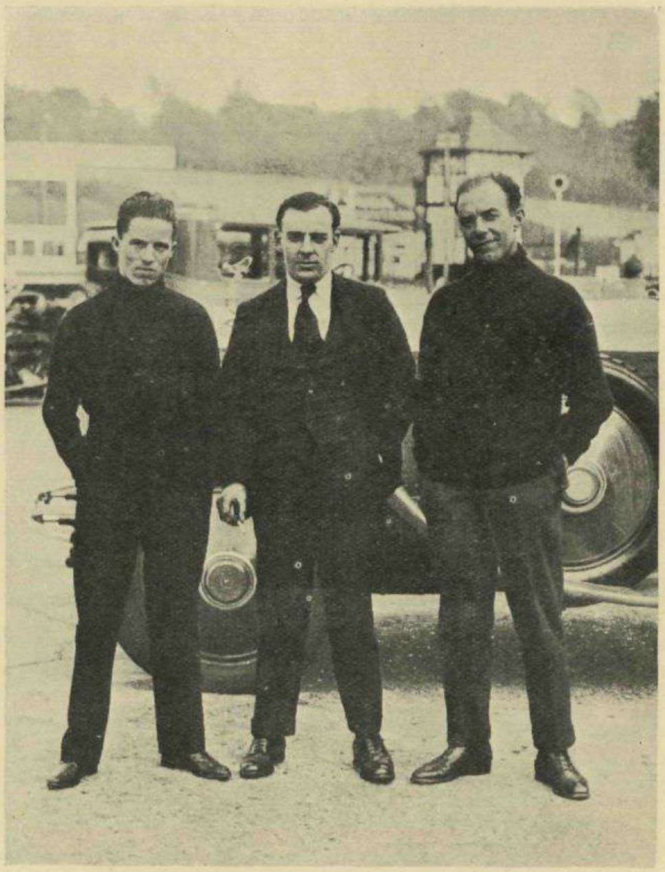
It will be remembered on this occasion, Jack Barclay took part in a later race on the same meeting and won at an average speed of 105.78 miles per hour !

Speaking of his business activities, Mr. Barclay says he considers the selling of a car merely as the commencement of business relations with a customer, as his policy is to continue giving service as long as may be needed. " Sooner or later," he says, " that customer, or one of his friends will want another car, and it is up to the seller to conduct his business in such a way that there is no hesitation for the man to come back the next time."

As far as we were able to judge from a short inspection of the stock and showrooms of Messrs. Barclay & Wyse, the policy stated above is proving its worth and though the bulk of the business is done with such high class vehicles as, Vauxhalls, Rolls-Royce, Hispano-Suiza and Sunbeam cars, the needs of sporting motorists of any class always receive the individual attention of Jack Barclay, whose wide experience enables him to solve any of the little problems confronting the purchaser.



One of Mr. Barclay's agencies is for the Rolls-Royce. This is his own car of that marque.



Mr. Barclay with two of his assistants ; Edwin Plaister, on the right is usually his passenger at Brooklands.

A TWO-STROKE BOOM ?

Is there to be a two-stroke boom ? The answer is that there is every probability of it.

A few years ago the two-stroke engine was stated to be practically extinct ; to-day it is more popular than ever and those engaged in its manufacture are extremely busy. It is far simpler than the four-stroke, containing, as it does, only three moving parts—the piston, connecting-rod and crank-shaft. It has no valves or timing gear and it fires every revolution instead of every other revolution ; the power transmitted is therefore more smooth and even than that of the four-stroke : it is simple to manufacture and there is practically nothing to go wrong.

It may be thought by some that the four-stroke engine will always be superior to the two-stroke as regards sheer speed, but it must be remembered that the latter type is, so far as design is concerned, much less developed than the former. In its present three-port form it is entirely satisfactory, but it is obvious that if two-stroke designers get busy they have a far bigger field for experiment as regards speed than those who deal with four-strokes. Continental designers of both cars and motor-cycles have made experimental two-stroke engines which have given remarkable results and it may well be that before long the two-stroke engine will come into its own and will startle the motoring and motor-cycling world by the development of hitherto undreamed of power.

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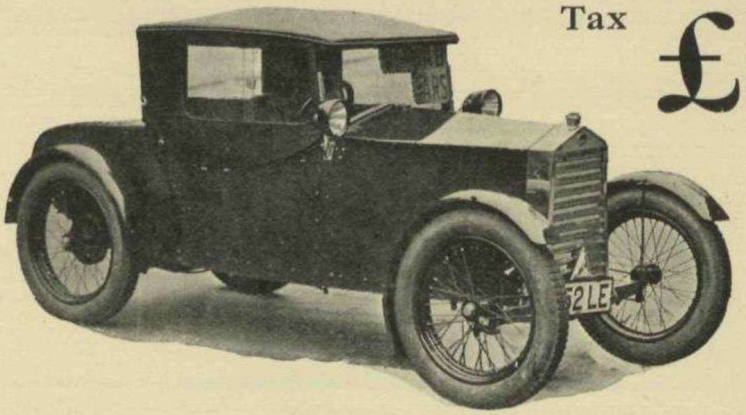

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HAVE YOU READ THEM?

Some interesting numbers of the Brooklands Gazette and Motor Sport

STILL OBTAINABLE.

July, 1924. Foundation Number. Articles by the late Count Zborowski, Captain Frazer-Nash, C. F. Temple and other celebrities. Road Tests of Bentley and Brough-Superior.

September, 1924. Biographies of Kaye Don and H. le Vack. List of Records. Olympia Notes.

March, 1925. Biography of Malcolm Campbell. Articles by Lionel Martin and Captain Phillips.

April, 1925. "Supercharging" by H. Hagens. Road Test of Super Sports Alvis, Biography of J. G. P. Thomas. Articles by Long Tom and J. F. Duff. Reports of important Sporting Events.

June, 1925. Test of supercharged Mercédès. Article by B. S. Marshall. Tourist Trophy Notes. Streamline Bodywork. Illustrated reports of events.

July, 1925. Anniversary Number. T.T. Races. Biography of Captain Frazer-Nash. Road Test of 45 h.p. Renault. Racing at Brooklands and Skegness.

October, 1925. Biography of H. O. D. Segrave. J.C.C. 200 mile race. Italian Grand Prix.

December, 1925. World's Fastest Car, by Malcolm Campbell. Road Test of Indian Scout and Sports Daimler.

June, 1926. Biography of A. G. Reynolds. Notes on T.T. Machines. Brooklands Racing.

August, 1926. Cars for the R.A.C. Grand Prix. Road Test of 1,000 cc. McEvoy. High efficiency Piston design. Biography of J. S. Wright.

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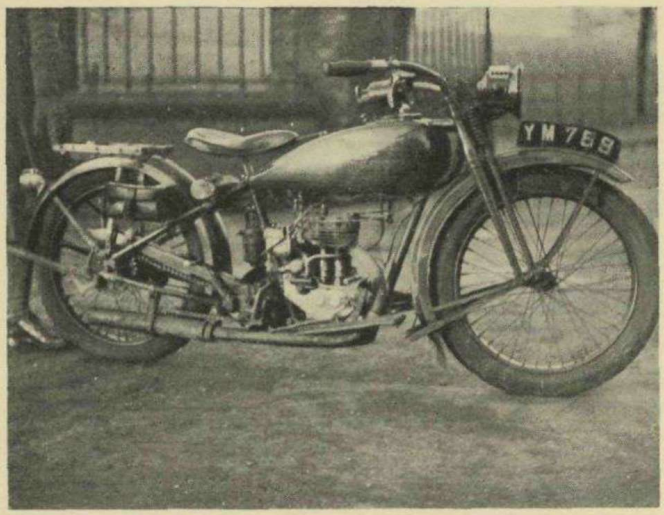


SPORTING MACHINES ON TEST :

The 350 c.c Harley-Davidson.

By "THE RABBIT."

READERS may look askance at the photographs of this machine and wonder if the author has taken leave of his senses, for whoever saw a *sporting* machine with such handlebars *and* footboards ? Think again, dear reader, and recollect how those super-speed-men, the U.S. motorcycle police invariably " sit-up," even at 80 m.p.h., and how the great little Freddie Dixon always uses foot boards for road racing.

The truth of the matter is that American machines steer so superlatively well that the " crouch and hang on " attitude is absolutely unnecessary except for track racing ; but this talk of racing is all wrong—racing is not the only side of motor sport and it certainly has nothing to do with the machine in question.

There is something decidedly " different " about the American motor-cycle, something hard to define, but there nevertheless : it seems to be a subtle blend of comfort, solidity and attention to detail, without any unwieldiness or lack of performance. The 350 c.c. Harley-Davidson impresses one immediately as one of those machines eminently intended for going somewhere and back, as opposed to the all too common, delicate toy which so many machines resemble. Built for far rougher use than it is ever likely to be subjected to in this country, the Harley, we are told, is very heavy for its size (260 lbs.), this we find hard to believe as its weight distribution is so cunningly arranged that it is one of the most easily handled machines we have ever met. This effect was enhanced by a lively little engine and rather low gears which combined to produce surprising acceleration and vim. The maximum speed was something between 50 and 55 m.p.h. at which speed the engine was naturally turning round rather rapidly, but no appreciable fuss or vibration became evident.

A Machine with a Past.

The particular machine lent to us by Messrs. Harley-Davidsons had been ridden by their representative in several extremely rough trials, Scottish Two Days and Scott Scramble included, and the somewhat sloppy piston advisable for really hard work was inclined to tap a trifle when cold. This small matter was amply counteracted by the entire freedom from loss of power after miles of low gear mud-plugging, and full throttle work ; the other parts of the machine showed absolutely no sign whatsoever of rough treatment. Of course, it may have been re-enamelled and overhauled before we had it, but after ill treating it to the best of our ability we are quite prepared to believe that this was not done, even after the Scott Trial.

We absolutely failed to develop a breakage or a rattle in any part of the machine, even footboards and mudguards surviving several violent collisions with boulders and tree trunks. An argument with a tree resulted in a dented tank, but this can cast no possible reflection on the machine, as the dent was caused by the tree itself and not by the handlebars, which cannot swing round on to the tank.

The reader may perhaps wonder what all these collisions and things mean—the old story again—reliability trials ! The Harley was ridden in two, on successive week-ends, by different people. Both were scramble events, including water, open downland and the usual boggy farm and woodland tracks. In the first it made second fastest time and in the second it won the premier award, and in both events it went through at least one hedge ! In addition to this it was crashed quite heavily at about 35 m.p.h. in some colonial section. That the machine stood up to this treatment so well is remarkable, most of the other competitors suffered the usual annoying breakages of mudguard stays, footrests and controls, but as we said before the Harley finished intact. Another interesting point is that both riders were accustomed to the conventional British hand clutch and right hand gear change, yet both, found the Harley perfectly controllable in spite of its somewhat awkwardly placed foot clutch. A small criticism occurs here, when turning in a

THIS PHOTOGRAPH SHOWS THAT THE HARLEY IS REASONABLY AMPHIBIAN !

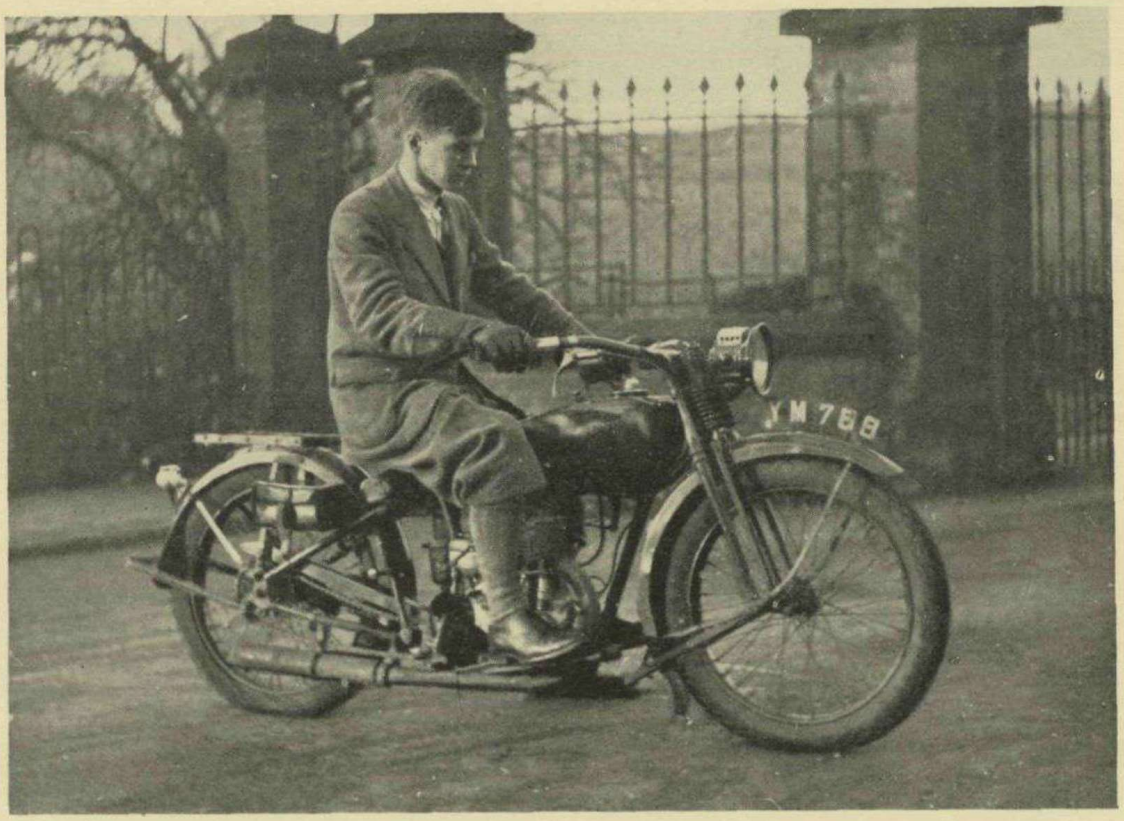
SPORTING MACHINES ON TEST—continued.

confined space, such as a narrow road, the steering lock is limited by the long handlebars fouling the knees,—it is impossible to dangle one's legs out of the way owing to the necessity of keeping the feet up on the clutch and brake pedals. The footbrake is powerful and smooth, but the handbrake, also working on the back wheel, does not seem very effective, and of course the lack of front brake is a serious defect shared by all American motorcycles.

The single cylinder Harley is fitted with a Wheeler-Schebler carburettor, operated by a single twist grip control; adjustable pilot and main jets are fitted, together with an air strangler, so that slow running, easy starting and the correct mixture for all conditions

Although at first it appears that the Harley has a "straight through" exhaust pipe, it is actually fitted with a very efficient silencer, so that at low speeds the exhaust is almost inaudible, while even on full throttle the "man in blue" could hardly take exception to the noise.

The one great point not dealt with so far, is comfort, and in this the Harley Davidson excels. On ordinary roads one can forget that the object beneath is a motorcycle, the position is just right for comfortable touring, and the only controls used at all often are throttle and brake, both being workable without any change of position. The whole machine glides smoothly over potholes and bumps, like a well sprung car and if fitted with a



ARMCHAIR COMFORT AND EXTREME SOLIDITY OF CONSTRUCTION ARE TWO FEATURES OF THE SMALL HARLEY DAVIDSON.

are easily obtained. These features were found particularly useful during the recent cold weather.

During the fortnight we ran the machine, the only trouble we experienced was an attack of "non-startitis" one cold morning, easily traced to a stuck contact breaker arm. This was doubtless aided by the wetting which the machine underwent when the accompanying photograph was taken.

Economy of petrol is one of the features of the small Harley and together with the enormous tank combines to render re-fuelling a very rare occurrence, so much so that we found it very hard to estimate the consumption. 100 m.p.g. is not by any means an exaggerated claim.

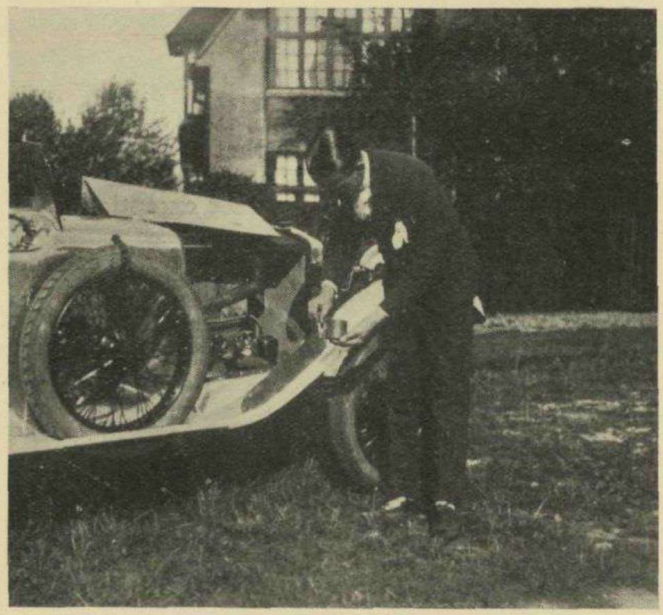
Oil consumption seemed on a proportionate scale and was unobtrusively attended to by a mechanical pump.

handlebar screen and shield we could not wish for anything pleasanter for a Boxing Night expedition to Exeter!

This comfort is due to the luxurious pan saddle, the large tyres and lastly the famous Harley forks.

Taking all things into consideration the Harley-Davidson is a thoroughly good machine, suitable alike for the roughest of competition work and the most gentlemanly touring to say nothing of serious business travelling.

We feel sure that if the Britisher were to overcome his inherent prejudice against American machines, and to make himself more familiar with their virtues, a large number of 350 c.c. Harley-Davidsons would be seen in this country.



TUNING CARBURETTORS FOR COMPETITION EVENTS.

The "Solex" Carburettor.

THE "Solex" carburettor occupies a deservedly popular place as the standard equipment for a large number of different makes of sports cars, and has achieved many notable successes in international racing events. Perhaps its most prominent feature is the remarkable degree of accessibility the construction affords, which in conjunction with the ease of tuning makes it an ideal instrument not only for the every-day motorist, but also for competition work, where such a simple thing as a choked jet may easily mean the loss of marks, or a bronze award instead of a gold.

No doubt many of our readers are vaguely familiar with the principles under which the Solex carburettor operates, but for the benefit of those who may know little of the theories involved we will give a brief descript tion, which can be followed readily by reference to the sectional illustration appearing below.

How the "Solex" Carburettor Works.

The petrol is fed in to the top of the float chamber O, through the union P, which is secured in position by the part Q, this being a combined set screw and body for the petrol filter, located within the union. The petrol then passes through the needle valve seating and fills the float chamber to the required level, when the rising float F comes into contact with the lower end of the needle valve P, and closes it on to its seating, thereby regulating the level. A flooder T, with a spring return, is fitted in the top of the float chamber to facilitate starting, if necessary.

The setting of the needle valve is arranged to shut off the petrol supply slightly below the level of the pilot, or auxiliary jet, G, from which a passage cast integrally with the body of the carburettor leads to the engine intake and is arranged to supply the fuel for slow running and idling.

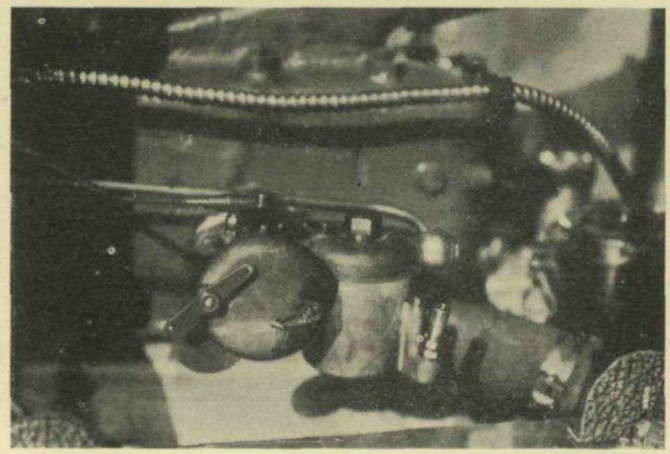
In the more recent types of Solex carburettor, the original barrel throttle has been superseded by the butterfly type, as shown in the illustration, thus giving a more definite shut-off and other advantages that were not so marked in the earlier form.

K is the choke tube, which is held in position by the set screw U, and is readily removable during the tuning operations. The jet assembly A is mounted in the lower portion of the carburettor, the "correction" with which our readers are now quite familiar being obtained as follows:—

The main submerged jet G is secured in a petrol tight manner at both ends by the outer cap A, which screws down upon the union T, the lower end of the jet being calibrated in accordance with the requirements of the engine, and, in addition, two holes are provided at the lower end of the jet. Between the main jet and the outer cap is a sleeve, the height of which extends a little above that of the level of the petrol, as controlled by the float chamber needle valve. In the outer cap A there are also two holes in the bottom and one in the centre at the top, the bottom ones being well below the choke tube, and are therefore under atmospheric pressure alone, whilst the upper one is surrounded by the choke tube, and thus falls under the influence of the engine suction.

When air is drawn through the choke tube K, by the engine, air is also drawn in through the lower holes of the outer cap A, and passes up and over the top of the intermediate sleeve. From thence it passes down between the sleeve and the main jet, and passing through the holes in the bottom of the main jet G mixes with the fuel passing into the engine via the top of the centre hole.

The greater the suction of the engine, the more air passes through the respective holes of the outer cap and the bottom of the main jet, the suction on the submerged jet orifice being reduced accordingly, and in



FLOAT CHAMBER IN POSITION FOR TESTING PETROL LEVEL.

TUNING CARBURETTORS—continued.

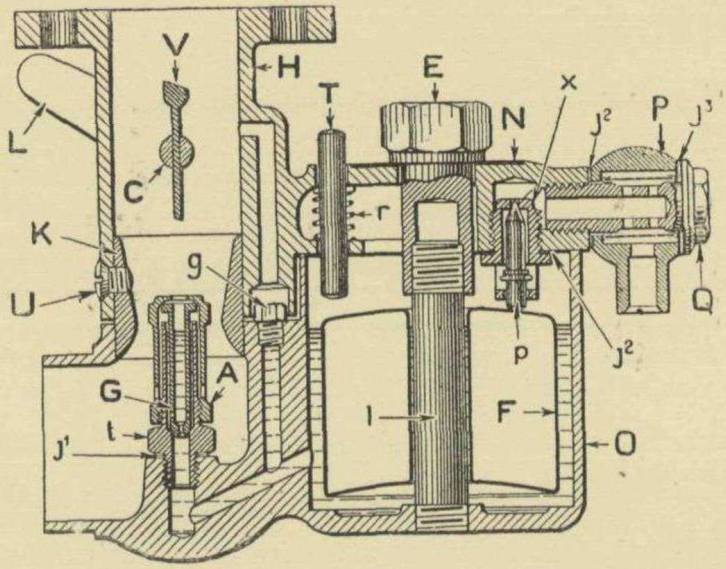
this way a correct balance of fuel to air is provided at any engine speed. The dimensions of these holes are of the greatest importance to the proper working of the carburettor, and having once been calibrated by the manufacturers, should on no account be altered.

Adjustment for Slow Running.

When the engine is running slowly with the throttle closed, the supply of fuel is drawn entirely through the pilot, or auxiliary jet G, the number stamped on this jet indicating its size and refers to the diameter of the orifice in hundreds of millimetres. As the jet orifices are calibrated by the manufacturers by the aid of a flowmeter, no attempt should be made to effect any alteration either by reamering or closing, but all alterations should be made by selecting a suitable pilot jet to suit the requirements of the engine.

Insufficient Fuel.

This is indicated by an irregularity in the slow running, but no particular rythm can be detected. If the jet is too small, the slow running will be improved temporarily by depressing the floodder T. If, also, the auxiliary jet is too small, considerable difficulty will be experienced in starting the engine. With regard to the latter point, it is usually found desirable to use an auxiliary jet of about one size larger than that which gives the leanest slow running mixture, in order to ensure easy starting, especially in cold weather. But, on the other hand the accessibility of the carburettor is so great that the changing of the jets for any conditions can be effected with the greatest of ease by anyone who really understands the principles under which the carburettor operates, though, of course, the practice of indiscriminate tinkering should be rigidly banned.



A CROSS SECTIONAL VIEW, SHOWING THE CONSTRUCTION OF THE SOLEX CARBURETTOR.

The adjustment for slow running is regulated independently and with no reference whatever to the conditions of the main setting, as the latter is entirely inoperative at low throttle positions. The following conditions regulate the efficiency of the slow running :— 1, Regulating the slow running mixture ; and 2, Regulating the minimum engine speed.

Regulating the Slow Running Mixture.

This is done by selecting a jet that will enable the engine to idle without any of the following symptoms :—

Excess of Fuel.

The use of an excessively large pilot jet will cause the engine to run with an irregular rhythm, commonly known as " hunting," and in such a case, after running slowly for a short time and switching off, a quantity of fuel will drip from the carburettor on opening the throttle. Should this occur, a pilot jet of smaller dimensions should be inserted and the slow running again tested.

The Regulation of Minimum Engine Speed.

Assuming that the selection of the auxiliary jet has been made in accordance with the above instructions, all that remains to be done with regard to this part of the operation is that of fixing the minimum engine speed, which is effected by adjusting a screw (not shown on the section), and this controls the amount by which the throttle is closed, and when once determined, this setting can be secured by a locknut, so that no further adjustment will be necessary.

Adjustment for Power.

The first point in tuning the main part of the carburettor is the selection of the choke tube, and as a rule the information as to size, provided by the makers, will be found correct with regard to different types of engines. Each choke tube has a number stamped on the inside, and this refers to the internal waist measurement in millimetres. When an approximately correct size of choke tube has been selected, the adjustment for power now becomes a matter of ascertaining the right

TUNING CARBURETTORS—continued.

size of the main jet G, the Solex system being so simple that these two adjustments alone suffice to give the best results, the intermediate sleeve and the outer cap remaining constant for various sizes of main jet. Thanks to the general accessibility of the carburettor, nothing could be simpler than changing the main jet, but attention is again directed to the avoidance of alteration of jet orifice sizes by reamering, or otherwise.

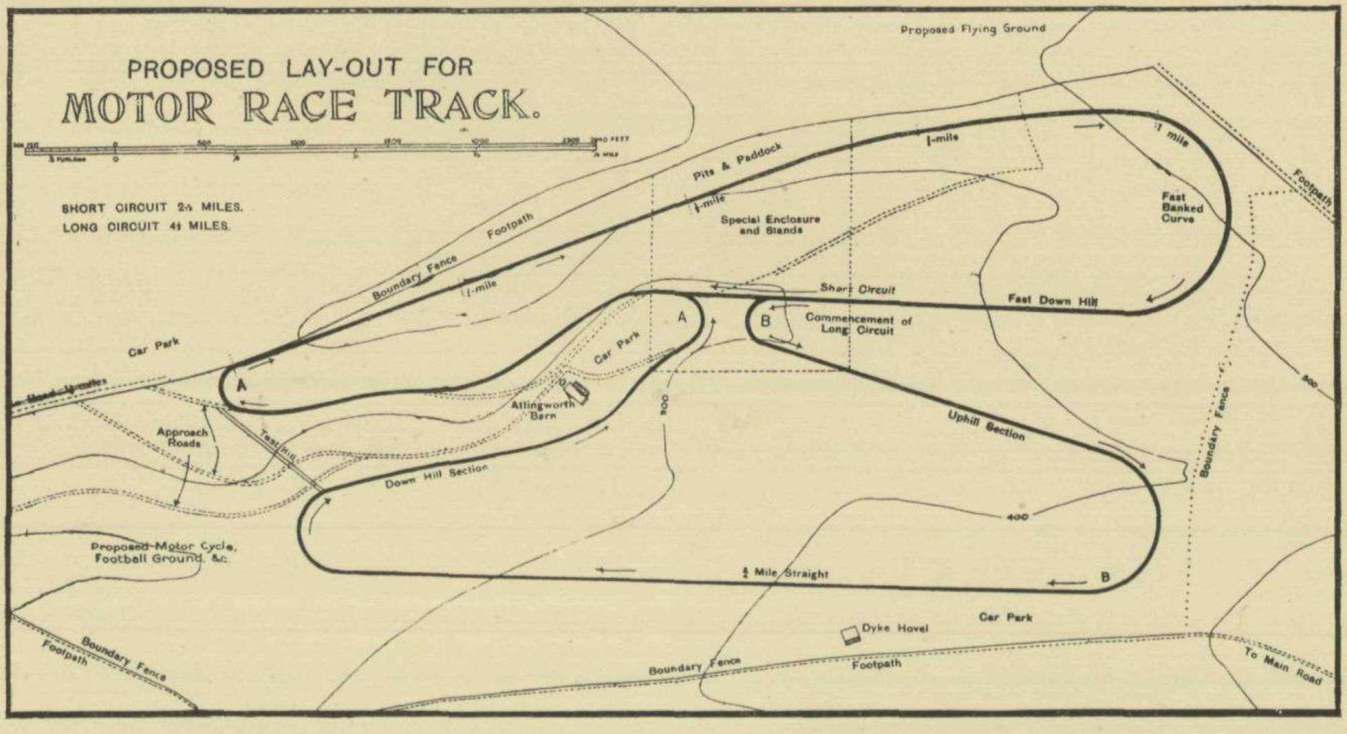
Generally speaking, the best results will be obtained by selecting the smallest size of main jet possible, consistent with good running power. If the main jet is too small, the engine will evince a tendency to hesitate on acceleration, which will be accompanied by the usual "popping" in the carburettor when cold. If, on the other hand, the size of jet selected permits the engine to answer to the throttle instantly on full opening, it may be taken that a smaller size of main jet can be used with advantage. In tuning the Solex carburettor, as with all others, the selections should be made after the engine has been allowed to warm up.

Testing the Petrol Level.

The arrangement whereby the two main portions of the Solex carburettor are secured by the nut E is very convenient when it is desired to test the petrol level. In this case the lower portion is released and swung round, so that the jet stand is clear of the choke tube, and then when the petrol is again turned on it is possible to see whether the needle valve shuts off the supply at the correct height with regard to the jets, or otherwise. The adjustment of level can be made by inserting thin washers beneath the needle valve seating at J2, or in certain cases by reversing the float, which will have the effect of raising the level.

The Solex carburettor is supplied either in the horizontal or vertical type, the same degree of accessibility being equally notable in both patterns. Very good workmanship and a careful calibration of all essential dimensions enables the user to obtain the best results for any given class of engine. The manufacturers are Messrs. Solex Ltd., of 222, Marylebone Road, N.W.1.

THE BRIGHTON RACE TRACK.



A new track, of which the salient features are made clear in the above plan, is to be built at Portslade, near Brighton. This track will be managed by the Brighton and Hove Motor Racing Club, Ltd., and will be available for racing under road conditions during the coming summer. Two hundred and fifty Founder members will be accepted in rotation on payment of an annual subscription of £2 2s., while the fee for ordinary members will be £3 13s. 6d.

Life membership will also be granted on payment of £15 15s. Among the notable personages associated with the activities of the club are Lt. Col. Moore-Brabazon (President), Viscount Curzon, T. B. André, F. W. Barnes, K. Lee Guinness, Colonel Sir Walter de Freece, Comdr. Mackenzie-Grieve and Prof. Low.

The Brighton Corporation is giving whole-hearted support to the scheme and work has already begun on the track which is situated in beautiful downland scenery.

All interested should apply to the secretary, C. L. Clayton, Esq., A.R.I.B.A., c/o Clayton & Black, Brighton.

THE LONDON-EXETER RELIABILITY TRIAL.

Well Supported by Amateurs The Winter Classic proves a Great Success.

FOR the habitual trials enthusiast, the Christmas holiday would fall somewhat flat but for the excitement of the London-Exeter trial, and though many familiar faces were absent at Staines on the evening of Boxing Day, owing to the trade ban, a very encouraging amount of support was accorded by amateur competitors.

One always expects some kind of record in connection with the " Exeter," sometimes it is the worst on record for bad weather conditions, sometimes " the great midnight motor race," as the lay press so often describes it, attracts record entries, and many other things are called in to make this particular event memorable in the annals of sport.

first stop was made and where those who had neglected to sup at Staines found refreshment at the " White Hart." Here the marshalling arrangements were excellent and though the stop was longer than could be desired, the time was wiled away with exchanges of experiences and discussions as to whether one's car would be fast enough to do the knots up Salcombe Hill. Many drivers were quite sure that their cars could not possibly do the speed, but though a " gold " was a practical impossibility for such, the thrills of the Exeter were sufficient to justify the outing.

Soon after leaving Salisbury, several defective lighting sets were noticed and those who had been using their cars for some nights previous to the start, found

A TRIO OF SOLO RIDERS BETWEEN BLANDFORD AND SALISBURY.

The recent Exeter was certainly a record in that the weather throughout was extraordinarily good and though everyone was looking forward to a drenching or two, the familiar gale across Salisbury Plain, and a selection of fogs, nothing more exciting occurred than a little mist over the moors and a bite in the wintry air.

Sharp to time the first of the competitors was sent off, the entries being made up as follows:—134 solo motor cycles, 111 sidecars, 23 three-wheelers and 107 cars. Amongst the car class, the sporting type was very much in evidence, the minimum speeds required up the test hill having the effect of keeping out many of the closed types.

With the exception of a few early retirements in the motor cycle class, there was little to occasion comment during the first part of the run to Salisbury, where the

that batteries were somewhat lacking in juice and dim headlamps were the result.

Many secret checks were expected even at the early stages of the outward journey and several drivers seriously jeopardized their chances by indulging in little bursts of speed on the clear stretches of road.

The procession was welcomed at Shaftesbury by a large gathering of local enthusiasts, who turned out in numbers at a late hour. Once again this trip demonstrated that the public interest in trials is as great as ever and everyone seemed to be on the alert to watch the appearance of their favourite cars.

At Yeovil, Mr. P. W. Moffat again gave his hospitality and turning part of his garage into a big canteen, dispensed coffee, cakes and cigarettes, which were very much appreciated. From thence onward, those who knew the

LONDON-EXETER—continued.

F. A. ROBBINS AND T. E. DEADMAN RIDING H.R.D. MACHINES.

ropes did their best to run as close to schedule as possible and made up a few minutes to have in hand at Honiton, in order to replenish before tackling the route across the moors, where the belated driver is apt to have a very worrying time in making up any lost minutes.

The tortuous roads leading to the bottom of Peak Hill, often led one to believe that they were on the wrong track and as it is very easy to lose sight of the preceding and following cars at this part of the run, one had to keep a very sharp look out for the route-marking arrows, which, thanks to the M.C.C. were located at convenient places.

Peak Hill, though a little rough in places, offers no real resistance to the well tuned car and most of the sports cars literally roared up with plenty of power to spare. The trouble with such hills nowadays is that they are often taken so fast as to engender skids, liable to cause the over eager competitors to come to a standstill; whereas those who plod up in a leisurely fashion generally come off best.

By this time, one began to look forward to the respite at Exeter and to the breakfast so well deserved. Dellers Cafe was very well patronised and the service of busses from the Garage to the Town had few idle moments during the stop. Of all the breakfasts in the year, the one at Dellers goes down best and it was a freshened crowd that trickled back to Goulds to re-start on the homeward journey.

For seventeen miles after leaving the cathedral city, the roads are good and enable one to make up a few more minutes in hand for tackling Marlpits Hill, where many spectators had gathered. The hill itself, however, proved to be in good condition and occasioned very little trouble, but served to indicate the powers of one's car to make the speed for the timed climb at Salcombe.

Great interest was displayed in the performance of the solo motor cycles, which went up at very high speeds, the riders showing that amateurs can perform just as well as professionals. The three-wheelers waggled up in frantic style and though it was obvious that many of the cars were not fast enough, the spectators found their fill of thrills by watching the sporting cars as they tore round the bends, throwing up showers of stones in their passage.

At the top of Salcombe many of the drivers paused to glance at the beauties of the scenery, which was looking its best with a thin mantle of frost spread over the landscape, then continued on by narrow lanes to Colyford and Axminster. A further spell of narrow lanes brought Beaminster in sight, near which lies White Sheet Hill and arriving at the foot one was called upon to make several unofficial stops and re-starts until the road was clear to run up to the starting line. Here again, the surface, though a little chewed up by the motor cyclist, caused but little anxiety with regard to wheel spin.

From the top of White Sheet Hill to Dorchester, some bad pieces of road were traversed, but after that the conditions improved and many drivers fell to the temptation of blinding across the plain. Once a very good race between a batch of sports cars was in progress and from a hill top, they could be seen careering along at something not far short of sixty-five miles per hour. Not a few continued the speed a little too far, for snugly sheltered in a corner was an official car with an official taking toll of those who arrived ahead of time. Others were fortunate in stopping just a few yards short of the secret check, but it is not known whether the eagle eye of the observer caught their number in the distance and awarded bad marks.

The last stages of the journey were easy, as well they might be considering the weariness of the drivers and their passengers and the run from Salisbury to Staines seemed interminable; for the fear of further checks made it necessary to refrain from a little fast travelling that would have refreshed the jaded travellers.

By the time Staines was reached, things seemed

R. BUGDEN WHO PERFORMED WELL THROUGHOUT ON A 175 c.c. SIDECAR OUTFIT, FOLLOWED BY L. GUNDLE ON A 350 c.c. L.G.C.

INTERNATIONAL CAR RECORDS.

Up to 15th November, 1926,

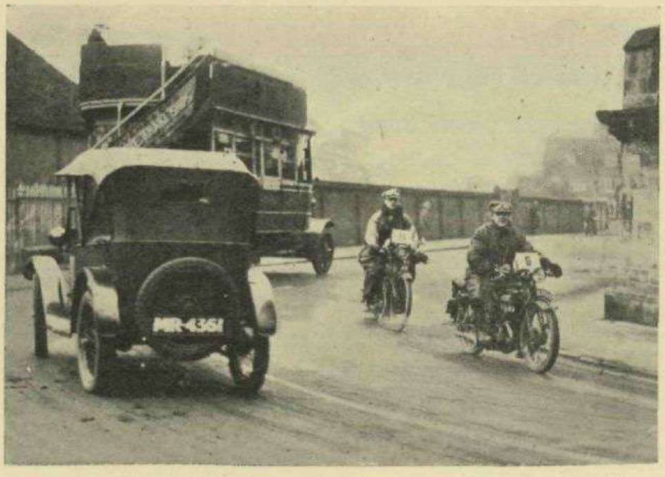
(New International Distances.)

WORLD'S.

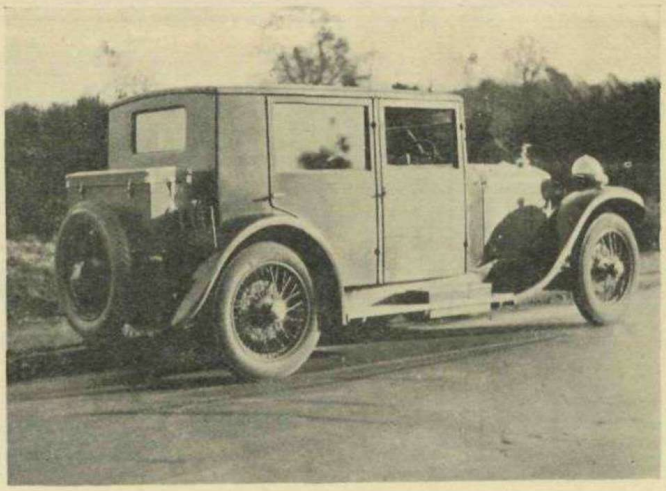
		Entrant.	Driver and Car.	Bore.	Stroke	c.c.	Time. H. M. SEC.	Distance. Miles. Yds.	Speed. M.P.H.	Speed. K.P.H.	Date.
Mean.	1 kilometer (s.s.)	J. G. P. Thomas	J. G. P. Thomas .. Thomas Special 12 cyl.				25.74		86.90	139.860	26.5.26
Mean.	1 ,, (f.s.)	,,	,,				13.80		171.019	275.229	28.4.26 *Pendine Sands*
Mean.	1 mile (s.s.) ..	,,	,,				36.41		98.87	159.111	26.5.26
Mean.	1 ,, (f.s.) ..	,,	,,				21.099		170.624	274.585	28.4.26 *Pendine Sands*
	5 kilometres (f.s.)	E. A. D. Eldridge	Eldridge, Miller 8 cyl. ..				1 18.94		141.68	228.021	10.9.26 *Montlhery*
	5 miles (f.s.) ..	,, ,,	,, ,, ..				2 08.01		140.61	226.259	19.10.26 *Montlhery*
	10 kilometres (f.s.)	,, ,,	,, ,, ..				2 40.98		133.96	223.630	19.10.26 *Montlhery*
	10 miles (f.s.) ..	,, ,,	,, ,, ..	59.52	89.04	1981.7	4 33.25		131.75	212.025	7.9.26 *Montlhery*
	50 kilometres (s.s)	,, ,,	,, ,,				14 12.74		131.16	211.084	22.10.26 *Montlhery*
	100 ,, (s.s.)	*Panhard & Levaassor*	*Orstmans .. .. .. Panhard & Levassor 8 cyl.*	95	140	7,940	29 44.07		125.38	201.785	15.3.26 *Montlhery*
	500 ,, (s.s.)	J. G. P. Thomas ..	J. G. P. Thomas 8 *cyl. Leyland-Thomas* ..	89	146	7,266	47 34.32		111.24	179.027	7.10.26
	1,000 ,, (s.s.)	*Renault* ..	*Garfield, Plessier & Guillon, Renault* ..				5 39 14.78		109.90	176.862	10.7.26 *Montlhery*
	2,000 ,, (s.s.)	*Renault*	*Gartfield, Plessier & Guillon, Renault*				11 33 19.07		107.55	173.080	10.7.26 *Montlhery*
	3,000 ,, (s.s.)	,, ...	,, ,, ,,				17 22 24.98		107.30	172.675	10.7.26 *Montlhery*
	50 miles (s.s.) ..	*Panhard et Levassor*	*Breton .. .. .. Panhard et Levassor 8 cyl.*	95	140	7,940	23 08.26		129.66	208.612	27.9.26 *Montlhery*
	100 ,, (s.s.) ..	*Panhard et Levassar*	*Orstmans .. .. .. Panhard et Levassor 8 cyl.*	95	140	7,965	48 30.50		123.690	199.054	25.3.26 *Montlhery*
	500 ,, (s.s.) ..	J. G. P. Thomas ..	J. G. P. Thomas 8 *cyl. Leyland-Thomas* ..	89	146	7,266	4 32 37.23		110.04	177.087	7.10.26
	1,000 ,, (s.s.) ..	*Renault*	*Garfield, Plessier & Guillion*				9 13 58.99		108.31	174.303	10.7.2 *Montlhery*
	2,000 ,, (s.s.) ..	,, ...	,, ,, ,, ..				18 36 23.58		107.49	172.984	10.7.26 *Montlhery*
	1 hour (s.s.) ..	J. G. P. Thomas ..	*Thomas, Leyland Thomas* .. 8 *cyl.*	89	146	7,266		121 137	121.74	195.925	21.10.26
	3 ,, (s.s.) ..	*Renault*	*Gartfield & Plessier* .. .. *Renault 6 cyl.*	110	160	9,112		333 860	111.16	178.899	19.3.26 *Montlhery*
	6 ,, (s.s.) ..	,, ...	*Gartfield, Plessier* .. .. *& Guillon, Renault*					660 1,450	110.14	177.249	9.7.26 *Montlhery*
	12 ,, (s.s.) ..	,, ...	,, ,, ,, ..					1,289 1,488	107.49	172.984	9.7.26 *Montlhery*
	24 ,, (s.s.) ..	,, ...	,, ,, ,, ..					2,589 1,070	107.90	173.649	9.7.26 *Montlhery*

Records made at Brooklands unless otherwise stated.

LONDON-EXETER (cont.).



E. A. CULLUM (B.S.A.) AND W. H. SARJEANT (A.J.S.) ENTERING SALISBURY.



A REAR VIEW OF THE 2-LITRE BALLOT CAR DESCRIBED IN THIS ISSUE.

brighter and those who signed claim cards for *golds* felt that the trip had been fully justified. Indeed, one heard but little from those who always turn up at the Exeter, though professing that they will never do so again.

Our Cover. The cover illustration this month shows S. Wallace (s.s. 100 Brough-Superior and side-car) negotiating Whiterock Hill in the Motor Cycle Union of Ireland Boxing Day Trial. Wallace is the present Reliability Champion of Ireland.

Round the Clubs

HONORARY DISTRICT AGENTS.

AMERICA.	A. M. Leitch, 115, Bank St., Norfolk, Virginia, U.S.A.
BARROW-IN-FURNESS, Lancs.	W. A. Singleton, 114, Sutherland St.
BASINGSTOKE, Hants.	Percy Watson, 1 and 2, Winchester Rd.
BLACKBURN, Lancs.	R. Jackson, 24, Cecelia Rd., Feniscliffe.
BLACKPOOL, Lancs.	T. Sharples, Rawcliffe Hall, via Garstang.
BLOXWICH, Walsall	Horace R. Millington, Wallington Heath.
BODMIN, Cornwall	W. H. Jenkin, Bodmin [Rd.
BOURNEMOUTH, Hants. ...	A. G. Cullwick, 6, Belvedere
BRIGHTON, Sussex.	Lieut.-Commdr. John Havers, 35, Lansdowne Place, Hove.
BRISTOL, Glos.	T. D. Corpe, Hill View, Churchill, Somerset.
BROMLEY, Kent...	F. Wilson Smith, 32, Hammelton Road.
CAMBRIDGE, Cambs.	C. A. C. Birkin, Jesus College
CARLISLE, Cumberland ...	F. Rowlands, "Douglas House," Nelson Street.
CARMARTHEN, Carmarthen. ...	J. Jones, Nelson Hotel.
CLECKHEATON, Yorks. ...	F. A. Brown, "Hill-Crest," Whitcliffe.
DERBY	Mr. M. A. McEvoy, Vicarage Lane, Duffield, Nr. Derby.
DEVIZES, Wilts.	G. H. Oliver, 18 and 19, The Brittox.
DOOARS, India	H. Marshall, Esq., Matelli T. E. & P.O., Jalpaiguri,
GRAVESEND	S. J. Gillis, "Comines," Wrotham Road.
LEAMINGTON SPA	E. B. Nelson, Riplingham.
MANCHESTER	E. O. Spence, Esq., 11, Liverpool Rd., Deansgate.
NEWCASTLE, Staffs.	E. Willan, 42, Grey Street.
NORTHALLERTON, Yorks. ...	R. D. Hudson, Old Bark House.
OTLEY, Yorks.	J. H. Holmes, The Garage, Station Road.
OXFORD, Oxon.	W. Mathews, 6, St. Aldate's.
PATELEY BRIDGE, Yorks. ...	G. Kingham, Colton Croft, Burnsall.
READING	S. W. Woollan, Caversham Motors, Ltd.
SCARBOROUGH, Yorks. ...	J. G. Bayne, 36, Trafalgar Sq.
SHEFFIELD, Yorks.	H. W. Ogg, 12, Southbourne Road, Broomhill.
STROUD, Glos.	W. E. Hayward, Bideford, Bisley Road.
TAUNTON, Som.	P. V. Hare, The Parade.
WOLVERHAMPTON, Staffs. ...	H. L. George, "The Homestead," Old Fallings Lane, Fallings Park.

Honorary District Agents are appointed by "Motor Sport" to further the interest in the sporting side of motoring and motor cycling.

We give on this page a list of the Honorary District Agents already appointed. Through these Honorary Agents we keep in touch with local events in all parts of the country, and with their co-operation we hope to increase the popularity of motor and motor cycle sport. Honorary District Agents will be pleased, whenever possible, to give assistance to motorists and motor cyclists, desirous of taking part in local events.

If you have any difficulty in obtaining "Motor Sport" in your neighbourhood, the nearest Honorary District Agent will inform you how you may obtain it.

Swansea and District M.C.C.

The above club held a team trial recently in conjunction with the Cardiff Club. A team of six riders was chosen from each club by Mr. J. J. Boyd-Harvey, who also planned the sporting course. The event started at the bottom of Pont-Rhyd-y-Fen, where the loose and stony surface was interspaced with transverse ridges of solid rock. Clean climbs were made by G. Gregor (B.S.A.) and A. Mapstone (Douglas), and H. H. Matlock (Scott) of Swansea, the J. E. Kettle (Scott) of Cardiff. The other competitors were obliged to use their feet to enable them to ascend. No competitors were penalised at Bryn Splash, but a section on the route card referred to as "British Trackway" resulted in many footrests being temporarily unpatronised, although Kettle easily managed to leave the remainder of the field. After the first check at Margam Park the route led back to "British Trackway." Here B. Ellis (Norton) experienced several punctures, but despite his misfortune carried on to the finish. P. Jones (H.R.D.), however, lost his way, had seven punctures, and finally retired thus leaving Cardiff a man short. The concluding stages of the trial were accompanied by semi-darkness and two of the competitors had to light up while still on the mountain. The Swansea team won the trial with a total loss of 424 marks. Cardiff lost 591 marks.

The teams were composed of the following riders:—SWANSEA, F. Dayson (Scott), G. Gregor (B.S.A.), S. Davies (Douglas), A. Mapstone (Douglas), B. Ellis (Norton) and H. H. Mattock (Scott). CARDIFF, J. Wilkinson (Sunbeam), P. Jones (H.R.D.), L. Brown (Triumph), O. H. Barron (Triumph), J. E. Kettle (Scott) and P. Pratt (Triumph).

Chester Le Street M.C.C.

The above club held an inter-team trial recently in conjunction with the Mid-Wear and District M.C. The course chosen was a sporting one and also proved very tricky. Only twelve of the eighteen riders finished the course. The results are as follows:—

WINNING TEAM: Mid-West "A" team comprised of C. R. Sanderson (B.S.A.), E. Pyle (B.S.A.) and R. Baxter.

YOUNG MOTORS, LTD., CUP AND GOLD MEDAL: E. Mole (Triumph).

MID-WEAR CUP: C. R. Sanderson (B.S.A.).

SILVER MEDAL: J. H. Heads (Douglas).

BRONZE MEDALS: A. Sharp (492 Sunbeam) and A. R. Rae (B.S.A.).

ROUND THE CLUBS—continued.

Ealing and District M.C.C.

The club held its annual dinner and dance at the Hotel Cecil recently. The president, Dr. A. M. Low, was in the chair, and well over a hundred members and guests were present. When proposing the toast of "The Club." Dr. Low made a speech which was rich in humour and anecdote. One of his suggestions was that the club should consider the holding of a cleanliness trial, with the object of drawing attention to the advances made in mudguarding. In his opinion clubs should not confine themselves merely to organising "watersplash trials," but should endeavour to increase the popularity of motor cycling by demonstrating the utility side of the pastime.

Mr. F. H. Douglas, the secretary, responded that he was of the same opinion regarding the need for such tests. He mentioned that during the course of the year the club had done much good work on behalf of charity. Four gymkhanas had been organized, and in all nearly thirty thousand people had watched displays of trick riding and motor cycle football. In humorous vein Mr. J. A. Masters proposed "The Visitors." In his reply M. F. T. Bidlake related some of his experiences in connection with the London-Holyhead trial. It appears that on one occasion his means of conveyance was F. A. Longman's sidecar. Owing to the combined weight of route-marking arrows, a tin of petrol and himself, the sidecar connections broke. Finally at Oswestry, there was only one connection left, and so he also left to complete the journey by train. Mrs. Gordon, wife of the chairman, then presented the year's awards; and a very enjoyable dance concluded the evening.

Rochdale and District M.C.

A good number of members and friends attended the annual dinner held recently at the Flying Horse Hotel. Rochdale. Colonel G. Scott, D.S.O. occupied the chair. Speeches were kept exceedingly brief, and all pointed to the progress the club had made since its inception three years ago. Many handsome prizes were distributed during the evening, and two special gifts were presented to Messrs. Wallwork and Bailon, in recognition of their kind services rendered throughout the year.

Derby and District M.C.

The results of the Hattan Cup trial is as follows:—

HATTON CUP AND REPLICA: E. Lester (348 Raleigh).

SILVER CUP (best passenger machine): H. Whiteman (Austin car).

BELLIAN CUP (best visitor): L. V. Barrow (Salmson car).

SILVER SPOON (best lady): Miss M. Hichmough (348 Douglas).

TEAD AWARD: Scott's Team (W. A. H. Scott 499 P. & M., J. I. Robertson 349 S.A. and H. Whiteman).

Hucknell and District M.C.

The course chosen for this new club's first reliability trial provided plenty of excitement for the competitors who took part in it. W. Bodhill (348 Raleigh) treated all obstacles with contempt, and demonstrated how rough and sticky going should be taken, he received the first prize, while J. Workman (349 B.S.A.) followed close behind.

A WONDERFUL RECORD ON ROAD & TRACK

SOLEX SUCCESSES 1926

200 MILES RACE

(BROOKLANDS, SEPT. 25th)

1,500 c.c.
FIRST Segrave **Talbot** special.
SECOND Divo **Talbot** special

1,100 c.c.
FIRST Martin **Amilcar** special.
SECOND Duray **Amilcar** special
THIRD Morel **Amilcar** special

750 c.c.
FIRST Gordon England **Austin** special
SECOND Hendy **Austin** special

For the sixth year in succession, "Solex" equipped cars have secured premier honours in this important race

GEORGES BOILLOT CUP
(August 26th, 1926, Boulogne)

FIRST "Solex" equipped 'Chenard-Walcker,' driven by Lagache. Time 5 hours 39 minutes 52 3/5 seconds.
SECOND "Solex" equipped 'Chenard-Walcker,' driven by Leonard. Time 6 hours 16 minutes 8 3/5 seconds.
THIRD "Solex" equipped 'Chenard-Walcker,' driven by de Zuniga

(*Won by "Solex" Equipped Cars for the FIFTH YEAR in succession*)

278 MILES LIGHT CAR GRAND PRIX
(Boulogne, 1926)

FIRST "Solex" equipped 'Bugatti,' driven by G. E. T. Eyston. Time 4 hours 20 minutes 43 1/5 seconds. Speed 64.125 m.p.h.
(*Subject to Official Confirmation*)

1925 Grand Prix (Boulogne) for cars of 1,500 kilo. was also won on "Solex"

WORLD'S RECORDS

On March 16th, at Southport Sands, Major H. O. D. Segrave, on the 4-litre Sunbeam, with "Solex," established a world's record speed of 152.336 m.p.h.

On the Monza Track, Milan, Miss V. Cordery completed 25,000 kilometres at an average speed of 89.7 m.p.h. on a British 'Invicta' Car, 'Solex' equipped.

THE DEWAR TROPHY
The Blue Ribbon of the Motoring World

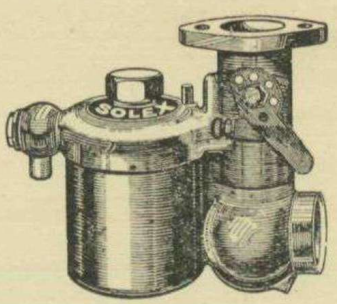
Awarded to Miss V. Cordery and her Invicta car fitted with two standard "Solex" Carburettors.

Brooklands "Evening News" **Gold Cup Race.** "Solex" equipped cars were First and Second.

"Solex" equipped cars secured premier honours in many other events also.

SOLEX
THE NO-TROUBLE CARBURETTOR

FREE TRIAL OFFER. Write to us to-day sending particulars of your engine no matter what type it is, and we will send you details of our 30 days FREE Trial Scheme. There is no obligation to purchase and no charge for renovation.



SOLEX LTD.
Director GORDON RICHARDS.
SOLEX WORKS
223-231 MARYLEBONE ROAD
LONDON N.W. 1.

fit Solex—and note the difference

Goodall Ad.

ROUND THE CLUBS—continued.

Grantham and District M.C. and L.C.C.

Nearly ninety members and friends were present on the occasion of the club's second annual dinner, held at the George Hotel Grantham, recently. In the absence of the president, Sir J. G. Thorold, Bart., Mr. J. R. Cashburn, a vice president, occupied the chair and read a letter from the president, in which he (Sir John) expressed a hope that the club would make use of Syston Park for some of its 1927 fixtures. Mr. C. H. Wild proposed "The Club," saying that he felt confident that it was in a flourishing condition, while Mr. J. W. Curtise mentioned that Mr. Coupe, of Mansfield, had presented to the club a cup for annual competition. After the Chairman had distributed the awards Mr. Curtis proposed "The President," stating that the club was indeed grateful to Sir John for the loan of Syston Park for racing purposes.

Bolton M.C.

At the club's annual dinner, held at the Pack Horse Hotel, Bolton, the president, Councillor W. Bradley, occupied the chair. Thanks to a certain Scottish element in the club the menu included haggis, "wi' a' the honours," and this called forth a reply, versified in the Lancashire dialect, referring to "Burns' welcome to the chieftain o' the pudden' clan." Several more speeches took a poetic turn, with witty allusions to the officials of the club, the North-Western Centre, famous riders, and the Northern representative of the Motor Cycle. The president, who stated that the club had 90 members, appealed to the company to refrain from driving methods that led to public complaints. Mr. A. Taylor, and Mr. N. Jackman represented the North-Western Centre, A.C.U., while Mrs. Bradley distributed the year's awards. An enjoyable musical entertainment was provided by various members of the club, and the event was voted a great success by all who partook in it.

Camberley M.C.

THOMPSON CUP: C. V. Patrick (Scott).
LUNNISS CUP: B. W. Swabey (James).
BURLINGTON CUP: T. G. Meeten (Francis-Barnett).
Miss Sturt was one of the competitors who was awarded a silver medal.

THE "GEORGE NEWMAN" CUP WHICH MR. NEWMAN IS PRESENTING TO THE B.M.C.R.C. TO BE WON OUTRIGHT IN A 50-MILES "ALL COMERS" RACE DURING 1927.

8,000 R.P.M.

The new twelve cylinder Delage engine, which recently underwent its bench tests, is accredited with a speed of 8,000 revolutions per minute. This remarkable power unit, from which something unusual in the way of performance is expected, has a total capacity of only 1,000 c.c.

SCORED CYLINDERS. Scores in cylinder bores can be filled in by Barimar Metallurgical (Patented) Process, to fit existing pistons and returned in two days under money-back guarantee, at low cost.—BARIMAR, Ltd. (Scientific Welding Engineers), 14-18, LAMB'S CONDUIT STREET, LONDON, W.C.1. Branches in Birmingham, Manchester, Leeds, Newcastle-on-Tyne and Glasgow.

BIRMINGHAM MEDAL CO., Vittoria St., Birmingham. Specialities: Club medals, badges, pennants, trophies, fcups, shields, advertising novelties, mascots, etc. Please write or lists and special designs.

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